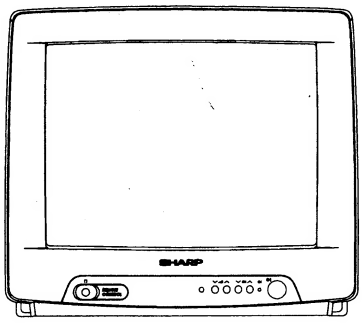
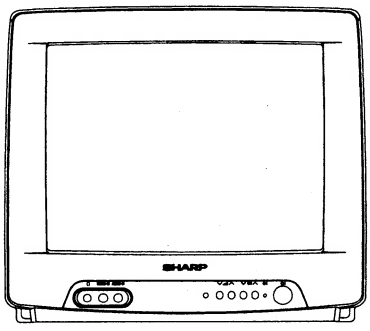
SHARP SERVICE MANUAL

S67Z737DM23S/

CA-1 CHASSIS



37DM-23S



37DM-24S

PAL/SECAM SYSTEM COLOUR TELEVISION

37DM-23S
MODELS 37DM-24S

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified be used.

CONTENTS

	Page		Page
• ELECTRICAL SPECIFICATIONS	2	• PRINTED WIRING BOARDS	15-16
• IMPORTANT SERVICE NOTES	3	• SCHEMATIC DIAGRAM AND WAVEFORMS	17-24
• SERVICE ADJUSTMENTS	4-11	• BLOCK DIAGRAMS	25-26
• SOLID STATE DEVICE BASE DIAGRAM	12	• PARTS LIST	27-35
• CHASSUS LAYOUT DIAGRAM	13-14		

SHARP CORPORATION

ELECTRICAL SPECIFICATIONS

Aerial input Impedance	75 ohm unbalanced
Convergence	Self Converging System
Focus	Bipotential electrostatic
Audio Power Output Rating	2 Watt (M.P.O.)
Intermediate Frequencies	
Picture IF Carrier Frequency	38.9 MHz
Sound IF Carrier Frequency	33.4 MHz
Colour Sub-Carrier Frequency	34.47 MHz (Normal)
Power Input	220/240 Volts AC 50 Hz
Power Consumption	38 Wh
Speaker Size	8 cm (Round)
Voice Coil Impedance	32 ohms
Sweep Deflection	Magnetic
Tuning Ranges	48.25 MHz-855.25 MHz CATV Special channels

Specifications are subject to change without prior notice.

WARNING

The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptacle, when servicing this chassis.
To prevent electric shock, do not remove cover. No user - serviceable parts inside. Refer servicing to qualified service personnel.

IMPORTAMT SERVICE NOTES

Maintenance and repair of this receiver should be carried out by qualified service personnel only.

SERVICING OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove static charge from it by connecting a 10 k ohm resistor in series with an insulated wire (such as a test probe) between picture tube ground tag and high voltage lead (AC line cord should be disconnected from AC outlet).

1. Picture tube in this receiver employs integral implosion protection.
2. Replace with tube of the same type number for continued safety.
3. Do not lift picture tube by the neck.
4. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely.

X-RAY

This receiver is designed so that any X-Ray radiation is kept to an absolute minimum. Since certain malfunctions or servicing may produce potentially hazardous radiation with prolonged exposure at close range, the following precautions should be observed.

1. When repairing the circuit, be sure not to increase the high voltage to more than 30.0 kV (at beam 1000 μA) for the set.
2. To keep the set in a normal operation, be sure to make it function on 23.0 kV (at beam 800 μA) in the case of the set. The set has been factory adjusted to the above mentioned high voltage. If there is a possibility that the high voltage fluctuates as result of the repairs, never forget to check for such high voltage after the work.
3. Do not substitute a picture tube with unauthorized types or brands which may cause excess X-Ray radiation.

BEFORE RETURNING THE RECEIVER

Before returning the receiver to the user, perform the following safety checks.

1. Inspect all lead insulation to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Inspect all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators, etc.

SERVICE ADJUSTMENT

■ SERVICE MODE FUNCTION

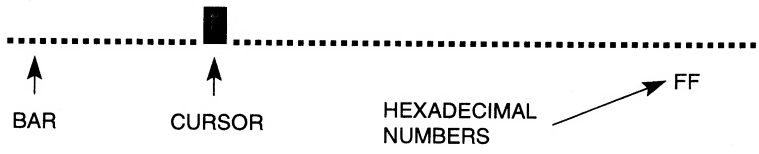
This mode function is provided to assist with the settings of those adjustments that may vary from one Picture Tube to another, or between models.

In order to use the Service Mode

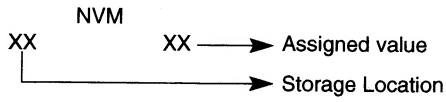
1. Press main switch to OFF.
2. Connect Test Pattern signal to antenna terminal.
3. Press ∨ ◿ and CH ∧ buttons and main switch to ON simultaneously.
4. –SERV–will appear on screen. Service mode is now entered.
5. Select adjustment using buttons ∧ CH ∨.
   To exit service mode, press main switch to OFF or press MENU button on R/C.

	Displayed on Screen	Hexadecimal Range	Function
	-SERV-		Indicates operative Service Mode.
a.	AGC	00 ~ 3F	Auto Gain Control.
b.	AFT	00 ~ 7F	Auto Frequency Control
c.	H-SHFT	00 ~ 3F	Horizontal Position shift
d.	V-SHFT	00 ~ 3F	Vertical Position shift.
e.	V-AMPL	00 ~ 3F	Vertical Amplitude shift.
f.	V-SLOP	00 ~ 3F	Vertical Symmetry alteration.
g.	V-DLY	00 ~ CF	VIDEO Delay.
h.	GAIN R	00 ~ 3F	Red Gain.
i.	GAIN G	00 ~ 3F	Green Gain.
j.	GAIN B	00 ~ 3F	Blue Gain.
k.	NVM		Access to NVM memory.

6. For "a" thru j selections.
   Adjustment to a selection can be made by pressing buttons ∧ ◿ ∨).
   A colour bar is displayed on the OSD to indicate the adjustment position, together with hexadecimal numbers (Not for GII adjustment).



For "k" Selection.
NVM storage location settings variants.



In order to have access to the desired storage location, buttons ∧ ◿ ∨ should be pressued, as required, to obtain a higher or lower location, respectively. Bear in mind that, for storage location indication a hexadecimal numerical system is used, instead of a decimal system.
0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, 10, 11, ...19, 1A, 1B, 1C, 1D, 1E,1F, 20, 21, ..., 99, 9A, 9B, 9C, 9D, 9E, 9F, A0, A1, ..., B0, ..., C0, ..., D0, ..., E0, ..., F0, F1, F2, F3, F4, F5, F6, F7, F8, F9, FA, FB, FC, FD, FE, FF.
From the last location FF to the first 00 can be reached by increasing and from first to last by decreasing. Once the storage location to be varied has been selected, its value can be modified by the bits that form part of the storage location numerical buttons, numbers [0] to [7], respectively. This switches its binary number from and between 0 and 1 each time one of the buttons is pressed.

$[0] = 2^0$ 1, $[1] = 2^1$=2, $[2] = 2^2 = 4$, ...

ADD (HEX)	DESCRIPTION
00	RED COLOUR TEMPERATURE
01	GREEN COLOUR TEMPERATURE
02	BLUE COLOUR TEMPERATURE
03	VERTICAL SHIFT
04	HORIZONTAL SHIFT
05	VERTICAL AMPLITUDE
06	VERTICAL SLOPE
07	LUMA DELAY PAL
08	LUMA DELAY SECAM
09	S-CORRECTION
0A	AGC
0B	OPTIONS: ING_OSD | A_F | CHL | PAL | UHF | T_LOCK | AV-F | FP 7 6 5 4 3 2 1 0 0: FP: SYSTEM B/G (0) - B/G+L, MESSAGE RECHERCHE (1) 1: AV FRONTAL: NOT INCLUDED (0) , INCLUDED (1) 2: TUNING LOCK (HOTEL): LOCKED+SWITCH-ON PR1 (1), NO LOCKED (0) 3: UHF-ONLY: BAND UHF (1) - ALL BANDS (0) 4: PAL ONLY (1), PAL+SECAM (0) 5: CHILD LOCK: CHILD LOCK ACTIVE (1) CHILD LOCK NO ACT (0) 6: AUTO FIRST: TUNING FIRST MENU: AUTO (1) MANUAL (0) 7: ING_OSD: OSD_INGLES (1) OSD-SYMBOL (0)
0C	AFT ADJUSTMENT VALUE (B/G, L SYSTEMS)
0D	AFT ADJUSTMENT VALUE (L' SYSTEM)
0E	MAXIMUM VOLUME LIMIT
0F	FIRM
10	RED COLOUR TEMPERATURE
11	GREEN COLOUR TEMPERATURE
12	BLUE COLOUR TEMPERATURE
13	VERTICAL SHIFT
14	HORIZONTAL SHIFT
15	VERTICAL AMPLITUDE
16	VERTICAL SLOPE
17	LUMA DELAY PAL
18	LUMA DELAY SECAM
19	S-CORRECTION
1A	AGC

<table>
<tr><td>1B</td><td>OPTIONS:
<table><tr><td>ING_OSD</td><td>A_F</td><td>CHL</td><td>PAL</td><td>UHF</td><td>T_LOCK</td><td>AV_F</td><td>FP</td></tr><tr><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table>0: FP: SYSTEM B/G (0) - B/G+L, MESSAGE RECHERCHE (1)
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<tr><td>1E</td><td>MAXIMUM VOLUME LIMIT</td></tr>
<tr><td>1F</td><td>FIRM</td></tr>
<tr><td>20</td><td>RED COLOUR TEMPERATURE</td></tr>
<tr><td>21</td><td>GREEN COLOUR TEMPERATURE</td></tr>
<tr><td>22</td><td>BLUE COLOUR TEMPERATURE</td></tr>
<tr><td>23</td><td>VERTICAL SHIFT</td></tr>
<tr><td>24</td><td>HORIZONTAL SHIFT</td></tr>
<tr><td>25</td><td>VERTICAL AMPLITUDE</td></tr>
<tr><td>26</td><td>VERTICAL SLOPE</td></tr>
<tr><td>27</td><td>LUMA DELAY PAL</td></tr>
<tr><td>28</td><td>LUMA DELAY SECAM</td></tr>
<tr><td>29</td><td>S-CORRECTION</td></tr>
<tr><td>2A</td><td>AGC</td></tr>
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<tr><td>2E</td><td>MAXIMUM VOLUME LIMIT</td></tr>
<tr><td>2F</td><td>FIRM</td></tr>
<tr><td>30</td><td>TABLE LONG</td></tr>
<tr><td>31</td><td>FIRM</td></tr>
<tr><td>32</td><td>AGING ON. AUTOMATIC SWITCH ON.</td></tr>
<tr><td>33</td><td>SWITCH ON DELAY TIME</td></tr>
</table>

34	VOLUME
35	CONTRAST
36	COLOUR
37	BRIGHTNESS
38	PEAKING (RANGE: 0-3FH)
39	ACTUAL PROGRAMM
3A	TV STATE ON/OFF
3B	HUE
3C	CONTRAST (FACTORY PRESET)
3D	COLOUR (FACTORY PRESET)
3E	BRIGHTNESS (FACTORY PRESET)
3F	PEAKING (RANGE: 0-3FH)(FACTORY PRESET)
40	ON TIMER LAST VALUE
41	OFF TIMER LAST VALUE
42	OSD STATE BIT 0: PICTURE NORM ON/OFF BIT 1: SCART/AV LOCKED BIT 2: FRONTAL LOCKED BIT 3: ROW 8/30 PERM.(RESERVED-PROG. INTERNALLY) BIT 4: PIN NUMBER OPTION (0-NOT APPEAR, 1-APPEAR) BIT 5: CLOCK STATE (PROGRAMMED INTERNALLY) BIT 6: ELIMINATE VERTICAL WHITE BARS IN MENUS BIT 7: (1) REAL_TIMER + ALARM / (0) ON_TIMER
43	BKGD USER'S CORRECTION (NOT USED IN THIS MODEL)
44	BKGD USER'S CORRECTION PRESET VALUE (NORMALIZED) (")
45	VOLTAGE LIMIT BETWEEN L'-L SYSTEM (MSB)
46	VOLTAGE LIMIT BETWEEN L'-L SYSTEM (LSB)
47	HORIZONTAL OSD OFFSET BIT 7: DIRECTION SIGN: (0) INCREASE (1) DECREASE BIT 6: DON'T CARE BIT 5 - BIT 0: OFFSET VALUE
48	PROG SEARCH SPEED ALL BAND -HIGH NIBBLE CMPLEMENTED-
49	PROG SEARCH SPEED (VHL BAND) -HIGH NIBBLE CMPLEMENTED-
4A	PROG SEARCH SPEED (VHL BAND) -HIGH NIBBLE CMPLEMENTED-
4B	PROG SEARCH SPEED (VHH BAND) -HIGH NIBBLE CMPLEMENTED-
4C	CHANNEL RANGE IN FACTORY AUTOINSTALL
4D	PASSWORD ON (1)/OFF (0)
4E	PASSWORD FIRST DIGIT
4F	PASSWORD SECOND DIGIT
50	PASSWORD THIRD DIGIT
51	PASSWORD FOURTH DIGIT
52	FREE

53	OSD WORD 1: BIT 0:OSD PROG SIZE. 0= LARGE (14") 1= SHORT (21") BIT 1:OSD PROG DISPLAYED TIME. 0=SHORT TIME / 1= LONG TIME	
54	RED REFERENCE FOR AUTO BKGD ADJUSTMENT	
55	GREEN REFERENCE FOR AUTO BKGD ADJUSTMENT	
56	BLUE REFERENCE FOR AUTO BKGD ADJUSTMENT	
57	CONTROL_2: OSO, VSD, CB, BLS, BKS, CS1, CS0, BB	VALUE+ 09AH
58	CONTROL_3: HOB, BPS, ACL, CMB, AST, CL2, CL1, CL0	VALUE= 024H
59	VERTICAL ZOOM APPROX.	VALUE= 0DH
5A	VERTIVAL SCROLL APPROX.	VALUE= 020H
5B	CONTROL_0: INA, INB, INC, CCC-D, FOA, FOB, XA, XB	VALUE=01AH
5C	CONTROL_1: FORF, FORS, DL, STB, POC, CM2, CM1, CM0	VALUE=0C0H
5D	CONTROL_5: EVG, HCO, LBM, VID, STM, NCIN, VIM, AKB	VALUE=026H
5E	CONTROL_6: IFS, AFW, IE1, COR, RBL, MAT, PRD, SBL	VALUE=03CH
5F	CONTROL_7: EVSINC, EBS, FFI, HBL, GAI, IE2, DS, DSA	VALUE=0H
60	NOT USED	
61-FF	PROGRAMS (0-52)	
100-18Dh	PROGRAMS (53-99)	

■ PIF/AGC Adjustment

1. VCO + AFT Adjustment

1. Connect the output of SSG (Standard Signal Generator) to the tuner IF output terminal.
   - SSG output: 38.9 MHz (CW) ±5 kHz).
   - SSG output level: approx. 90 dBμV.
2. Enter into Service Mode.
3. Push CH ∧ until AFT appears.
4. Press ⏻ button on R/C. Setting is made automatically. During this setting the colour bar shall go from red to yellow. When setting is finished, colour bar disappears and B-STOP (bus stop) is shown on screen.
5. Switch set OFF and ON again, setting is now memorized.

2. RF-AGC Cut-In Adjustment (I2C BUS)

1. Receive the "COLOUR BAR" signal (Channel E-12).
   - Signal strength: 60 dBμV.
2. Enter into Service Mode.
3. Push CH ∧ until AGC appears.
4. Press ⏻ button on R/C. Setting is made automatically. During this setting the colour bar shall go from red to yellow. When setting is finished, colour bar disappears and B-STOP (bus stop) is shown on screen.
5. Switch set OFF and ON again, setting is now memorized.

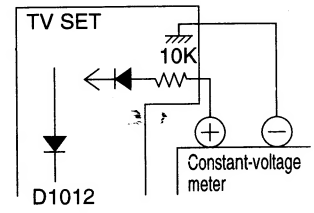
■ Screen Adjustment

3. Focus Adjustment

1. Apply mains voltage of 220 V AC/50 Hz to TV.
2. Receive Phillips pattern signal to a level between 60 and 80 dBμV.
3. Set contrast to 10/10, brightness to 5/10 and colour 0/10.
4. Adjust focus potentiometer to obtain maximum definition.

4. G2 Adjustment

1. Apply mains voltage of 220 V AC/50 Hz to TV.
2. Receive MONOSCOPE PATTERN signal to a level between 60 and 80 dBμV.
3. Apply 10 KΩ to the anode of D1012 and 5V to it through the diode.
4. Press the TEXT key of R/C and set to level.
5. Set to the point where the raster disappears on the screen VR of FBT.



■ GEOMETRY ADJUSTMENT PROCEDURE

1. H-SHFT

a) Receive Philips pattern signal.
b) When ◿/\ button is pressed, picture moves to the left.
c) When ◿\/ button is pressed, picture moves to the right.
d) Adjust the horizontal location to obtain picture centering (fig. 1)

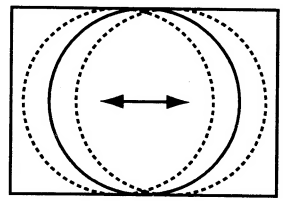


Fig.1

2. V-SHFT

a) Receive Philips pattern signal.
b) When ◿/\ button is pressed, picture moves up.
c) When ◿\/ button is pressed, picture moves down.
d) Adjust the horizontal location to obtain picture centering (fig. 2)

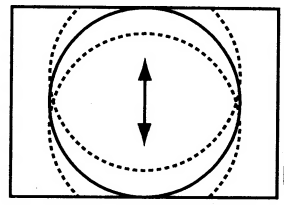


Fig.2

3. V-AMPL

a) Recive Philips pattern signal.
b) When ◿/\ button is pressed, vertical size of picture increases.
c) When ◿\/ button is pressed, vertical size of picture decreases.
d) Adjust the vertical size to obtain overscan (fig. 3).

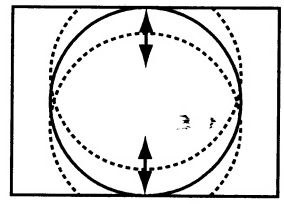


Fig.3

4. V-SLOP

a) Receive Philips pattern signal.
b) When ◿/\ button is pressed, upper picture scanning decreases and lower picture scanning increases.
c) When ◿\/ button is pressed, upper picture scanning increases and lower picture scanning decreases.
d) Adjust the vertical symmetry to obtain symmetrical scanning between upper and lower picture (fig. 4).

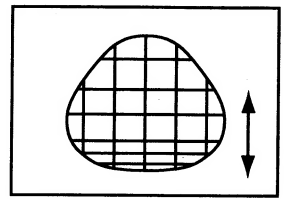


Fig.4

COLOUR ADJUSTMENT

5. V-DLY

a) Receive Philips pattern signal.
b) When ◿/\ button is pressed, luma phase delays.
c) When ◿\/ button is pressed, chroma phase delays.
d) Adjust the chroma-luma delay.

The following adjustments are only required when the Picture Tube is changed.

6. "GAIN R", "GAIN G", "GAIN B".

a) Adjust G2.
b) Tune in white card.
c) Adjust colour to minimum.
d) Position colourmeter in the center of screen.
e) Using brightness and contrast buttons, select a luminance of ≈ 120 nits.
f) Operate again in Service Mode and select location GAIN R, GAIN B to obtain colour coordinates:
X= 0.290 ± 0.015
Y= 0.284 ± 0.015
g) Exit Service Mode and check colour coordinates 'X' and 'Y' at 20 and 120 NITS. It may be necessary to repeat procedure.

NOTE:

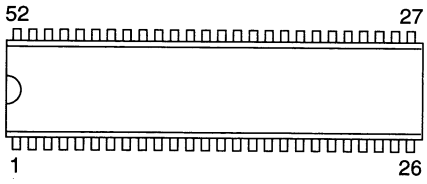
Locations: GAIN R alter 'X' coordinate; GAIN G alter the 'Y' coordinates; GAIN B alter the 'X' and 'Y'coordinates.

■ CHILD LOCK CANCEL

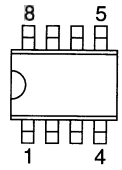
The following process describes how to cancel actual password (PIN) when the customer forgets code.

1. Switch ON TV set.
2. Press button ∨ ◿ on TV and ○┬ on R/C simultaneously.
3. Press MENU button on R/C to input menu.
4. Using buttons ∧ CH ∨ move to ○┬ position.
5. Press MENU button again.
6. Select PIN and input new PIN (Please do not forget it)
7. Select EXIT and press MENU button again.

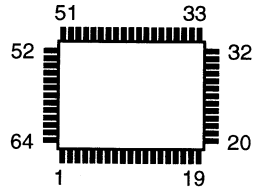
SOLID STATE DEVICE BASE DIAGRAM



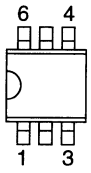
RH-IX1632BMN0



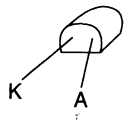
CH-IX1640CJS0
CH-IX1640CJS1
(SMD COMPONENT)



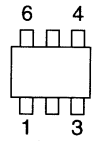
RH-IX1630BMZZ
(SMD COMPONENT)



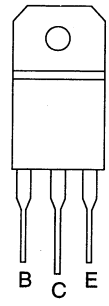
RH-FX0103BMZZ
(SMD COMPONENT)



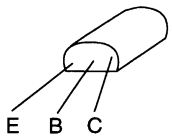
RH-IX0037CEZZ



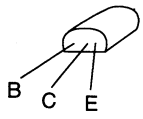
VHSMT1A/A//-1
(SMD COMPONENT)



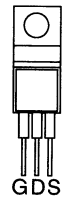
RH-TX0132BMZZ



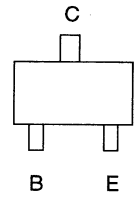
RH-TX0102BMZZ
RH-TX0104BMZZ
RH-TX0105BMZZ
RH-TX0142BMZZ
RH-TX0130BMZZ



RH-TX0108BMZZ
RH-TX0112BMZZ
RH-TX0118BMZZ
RH-TX0131BMZZ
RH-TX0181BMZZ
RH-TX0180BMZZ

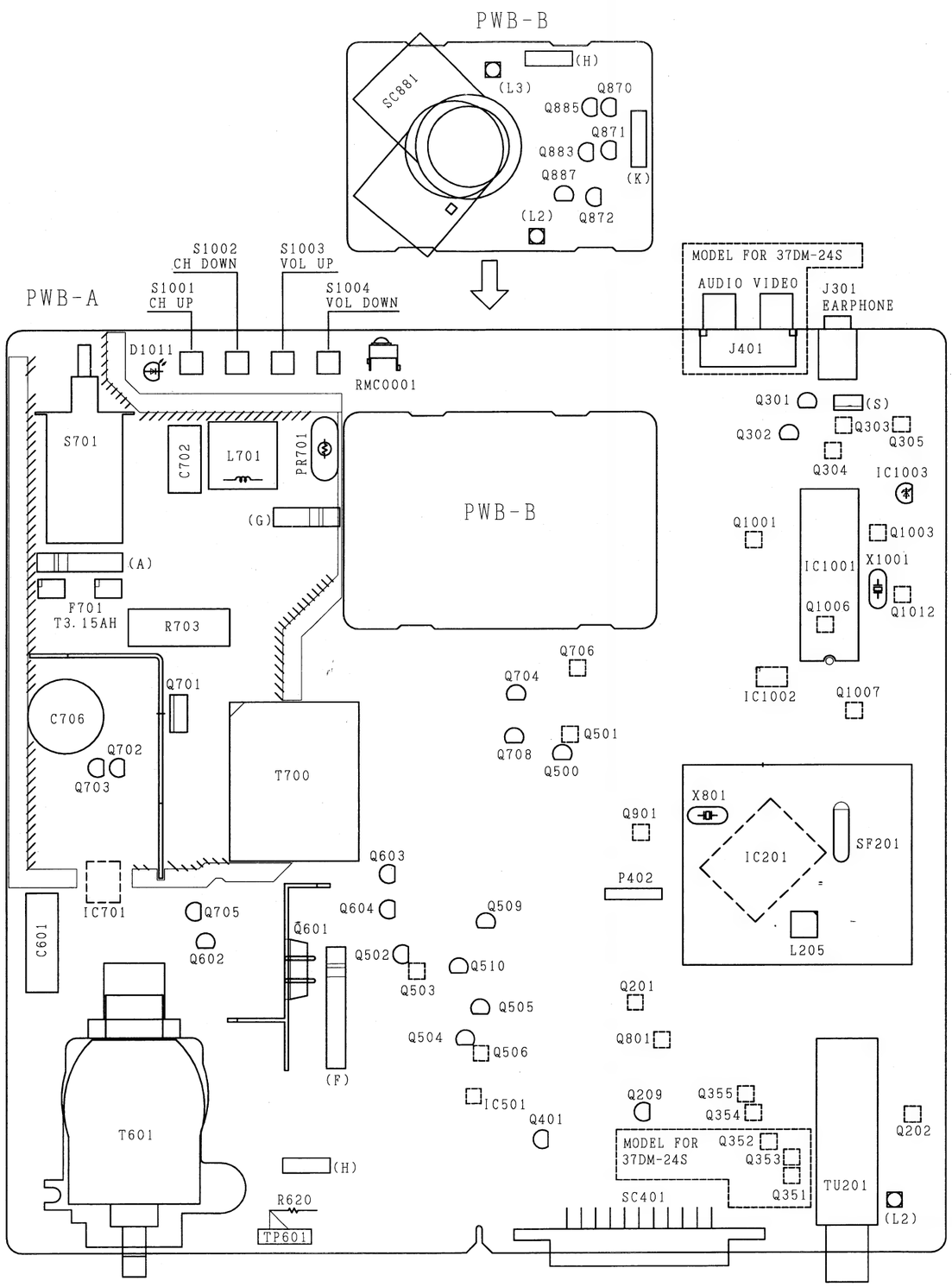


RH-TX0128BMZZ



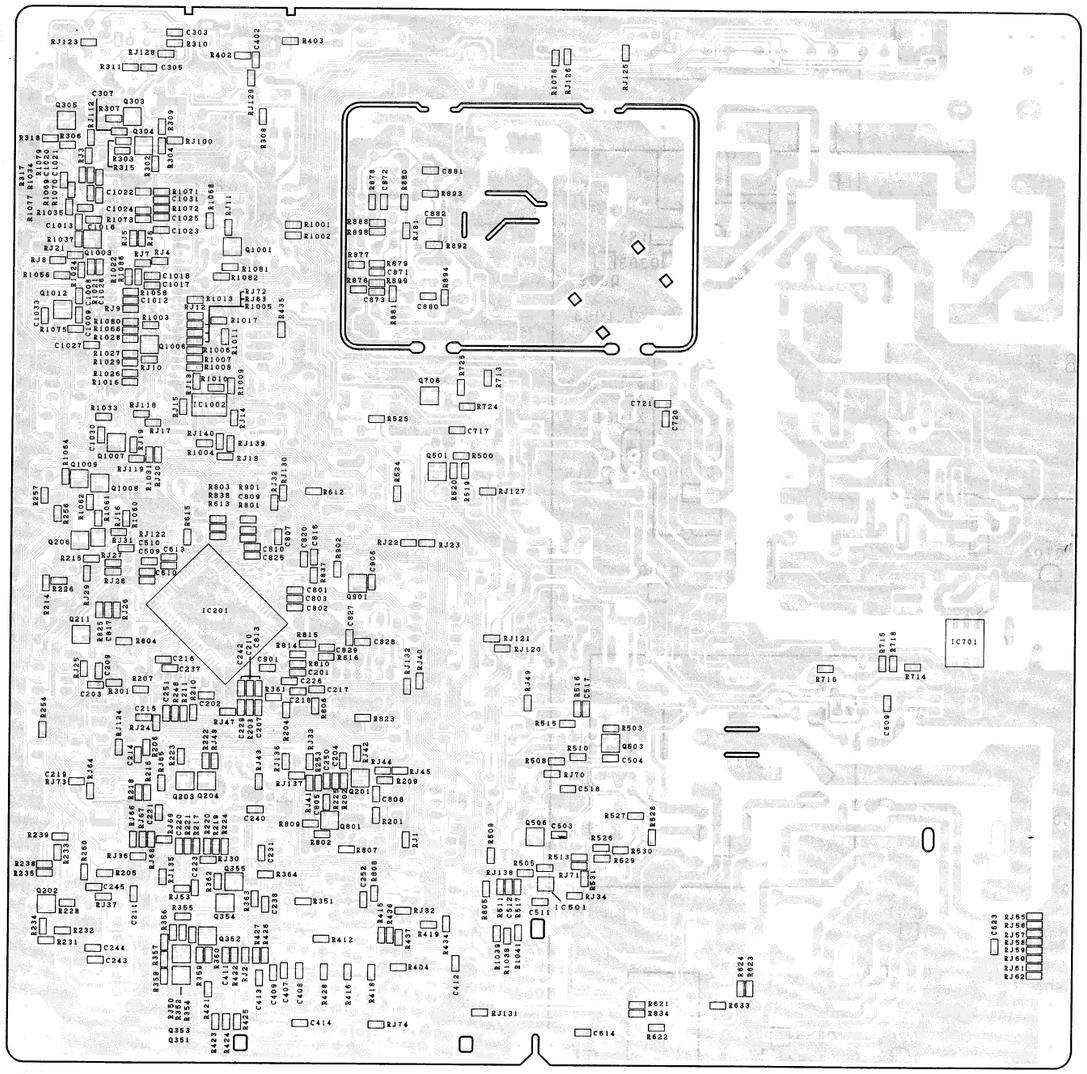
VS2SA1037KQ-1
VS2SC2412KQ-1
(SMD COMPONENT)

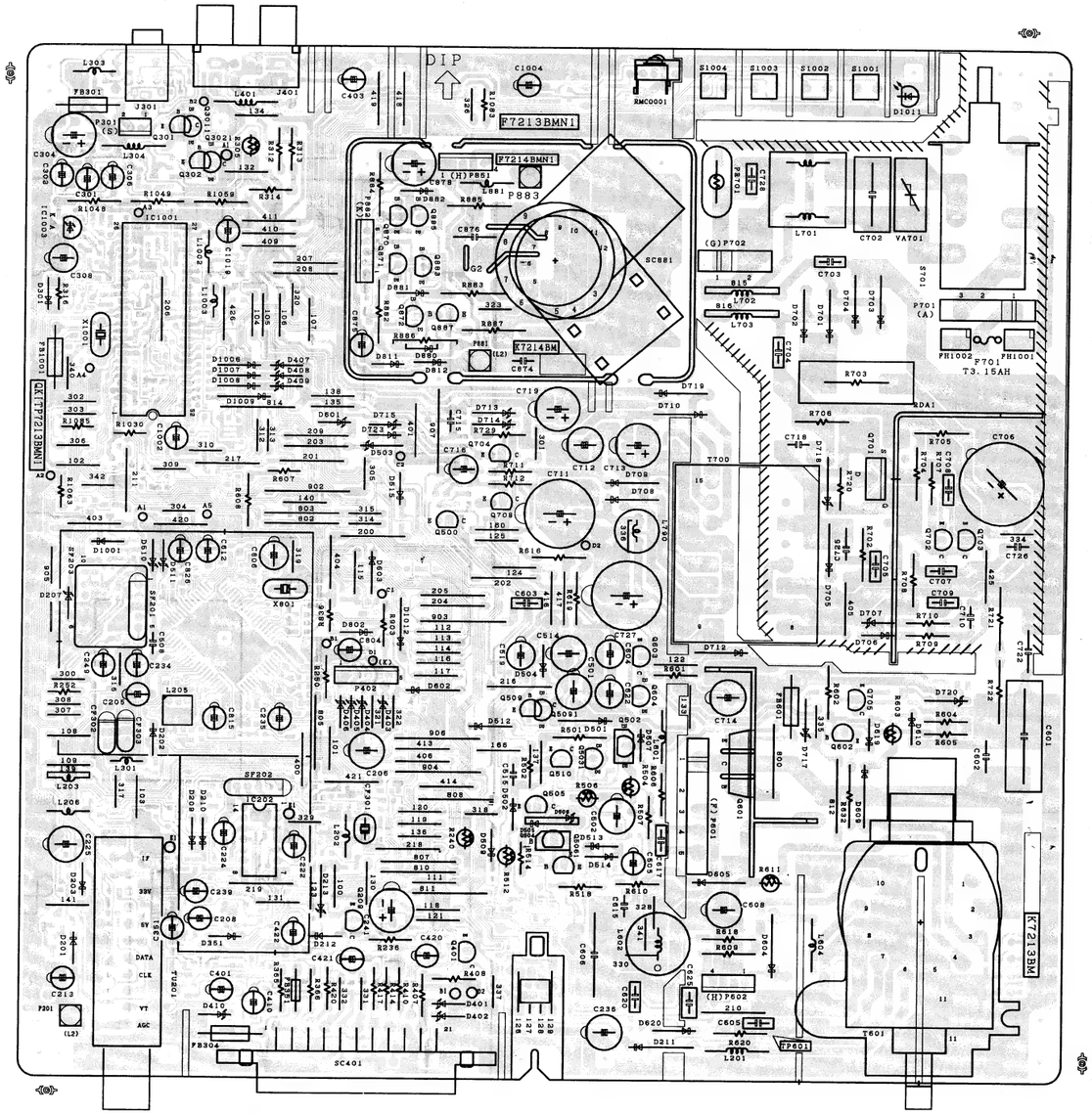
CHASSUS LAYOUT DIAGRAM



37DM-23S
37DM-24S

PRINTED WIRING BOARDS





H G F E D C B A

1 2 3 4 5 6 7 8 9 10 11 12

15 16

DESCRIPTION OF SCHEMATIC DIAGRAM

SAFETY NOTE:

1. *DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACEING PARTS.*
2. *SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.*

IMPORTANT SAFETY NOTICE:

PARTS MARKED WITH "⚠" ( ) ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

SERVICE PRECAUTION:

THE AREA ENCLOSED BY THIS LINE (▬ ▬) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE.
WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER.
BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

NOTE:

1. The unit of resistance "ohm" is omitted (K=1000 ohms, M=Magaohm).
2. All resistors are 1/8 watt, unless otherwise noted.
3. All capacitors are μF, unless otherwise noted (P=μμF).
4. The capacitor with Part No. RC-FZ9XXXBMNJ is designed to withstand 63V.

WAVEFORM MEASUREMENT CONDITIONS:

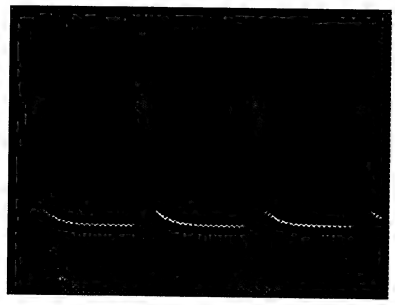
Colour bar generator signal of 70 dB from RF input.

CAUTION:

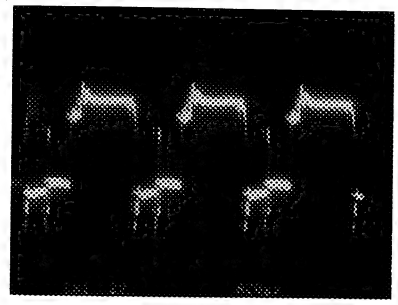
This circuit diagram is original one, therefore there may be a slight difference from yours.

WAVE FORMS

① 100 : 1



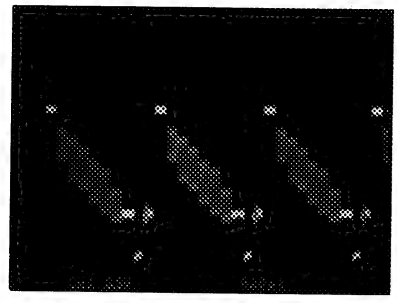
② 780V p-p 100 : 1



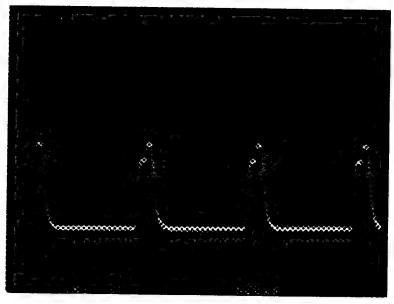
③

④ 40.1Vp-p

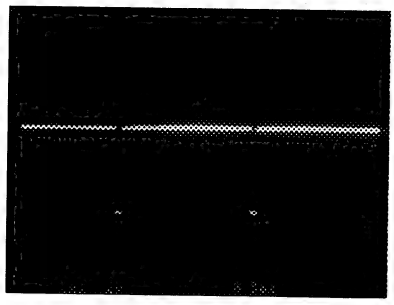
⑤ 1Vp-p



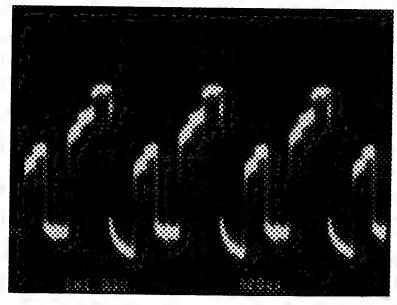
⑥



⑦



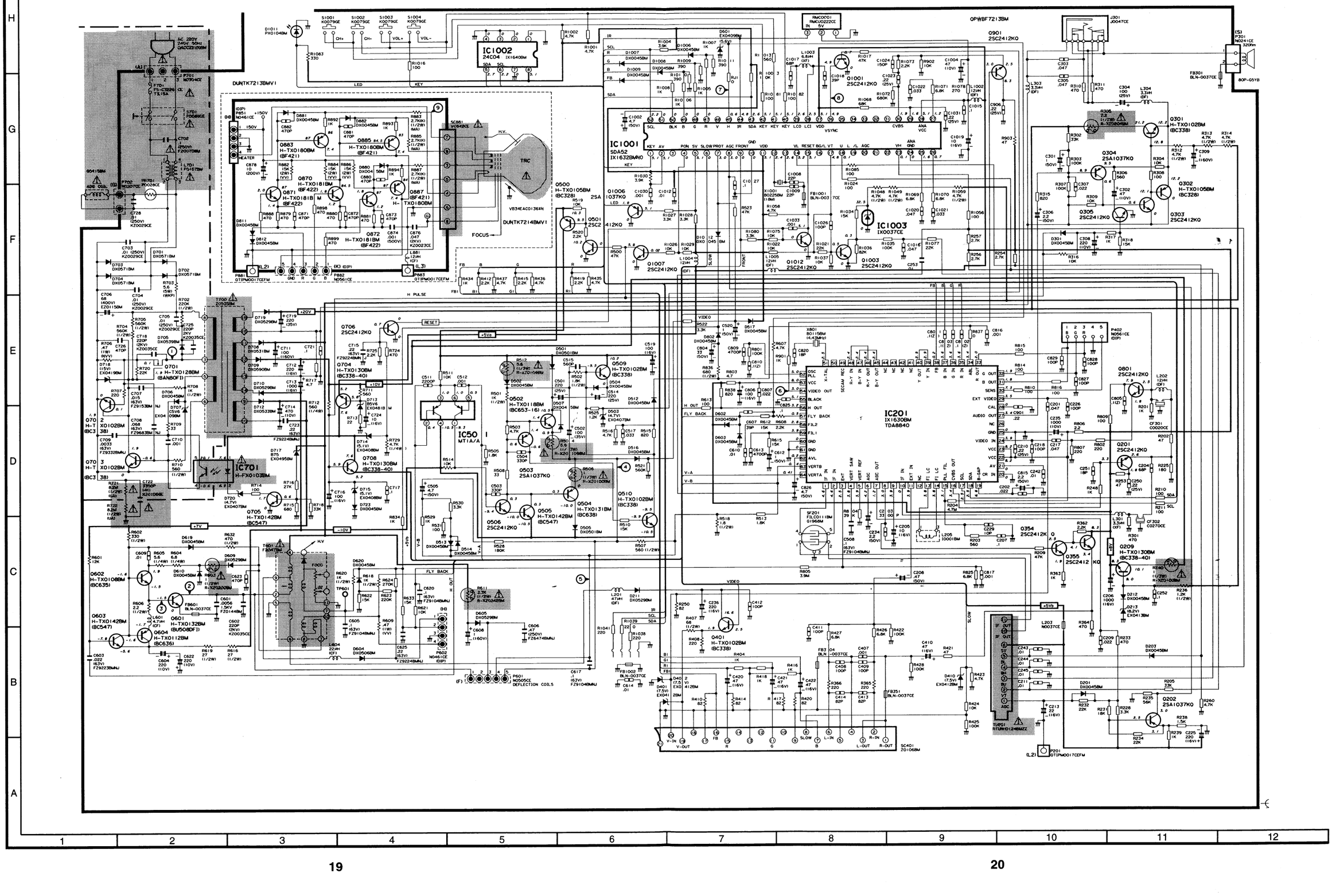
⑧ 5Vp-p



⑨ 50.6Vp-p 100 : 1

MAIN CIRCUIT (37DM-23S)

⚠ AND SHADED COMPONENTS=SAFETY RELATED PARTS


IC1002
24C04 IX1640BM
IC1001
SDA52
IX1632BMN0
IC1003
IX0037CE
IC201
IX1630BM
TDA8840
IC701
H-FX0103BM
IC50
MT1A/A
DUNTK7213BMV1
DUNTK7214BMV1
OPWBF7213BM
FOCUS
H.V.
TRC
VB34EAC0136N
0701
H-TX0128BM
(BAN80F1)
0708
H-TX0130BM
(BC338-40)
0709
H-TX0102BM
(BC338)
0710
H-TX0102BM
(BC338)
0501
2SC2412KO
0502
H-TX0118BM
(BC653-16)
0503
2SA1037KO
0504
H-TX0131BM
(BC638)
0505
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(BC547)
0506
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(BC547)
0508
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(BC338-40)
0705
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0499
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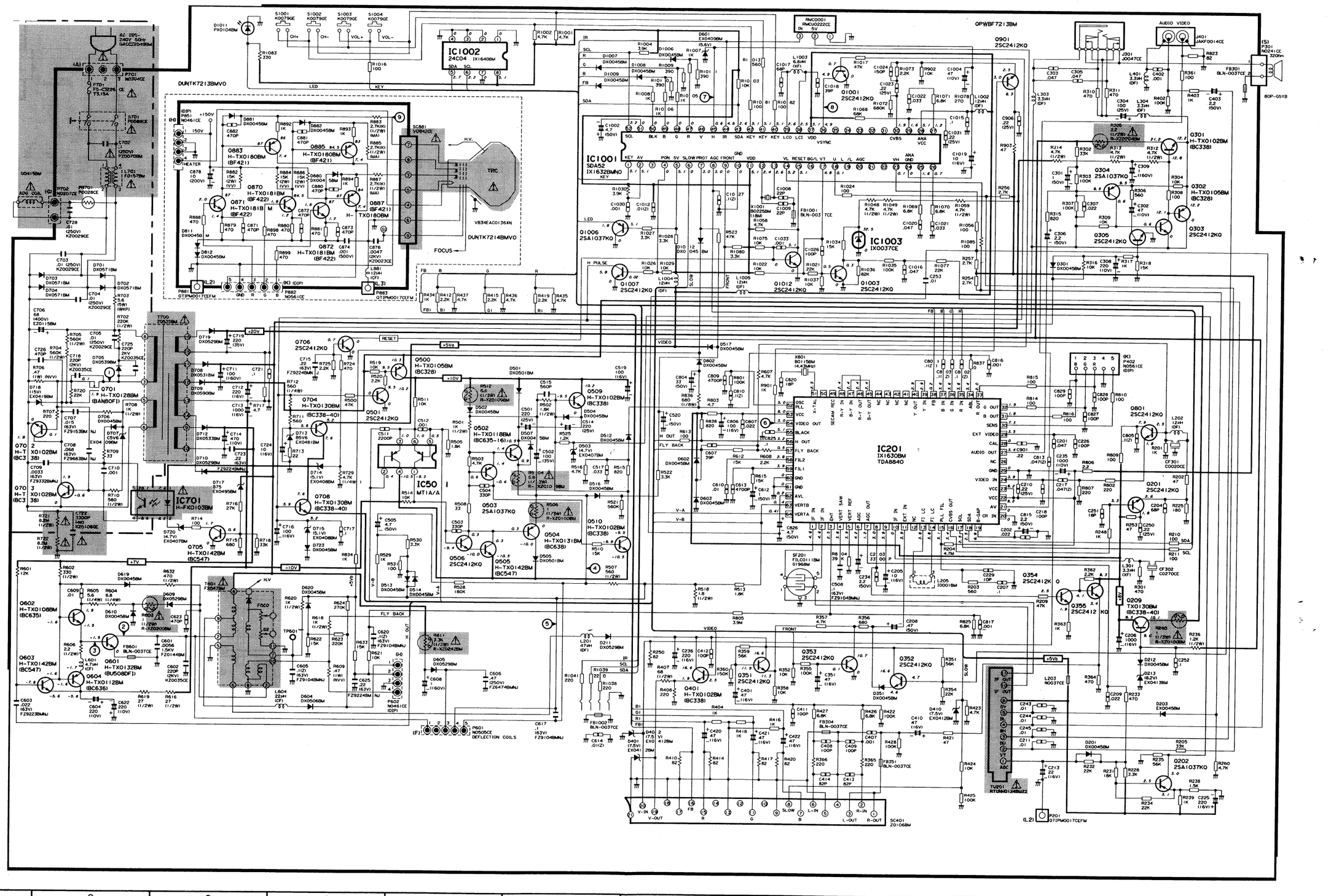
(BC338)
0500
H-TX0105BM
(BC328

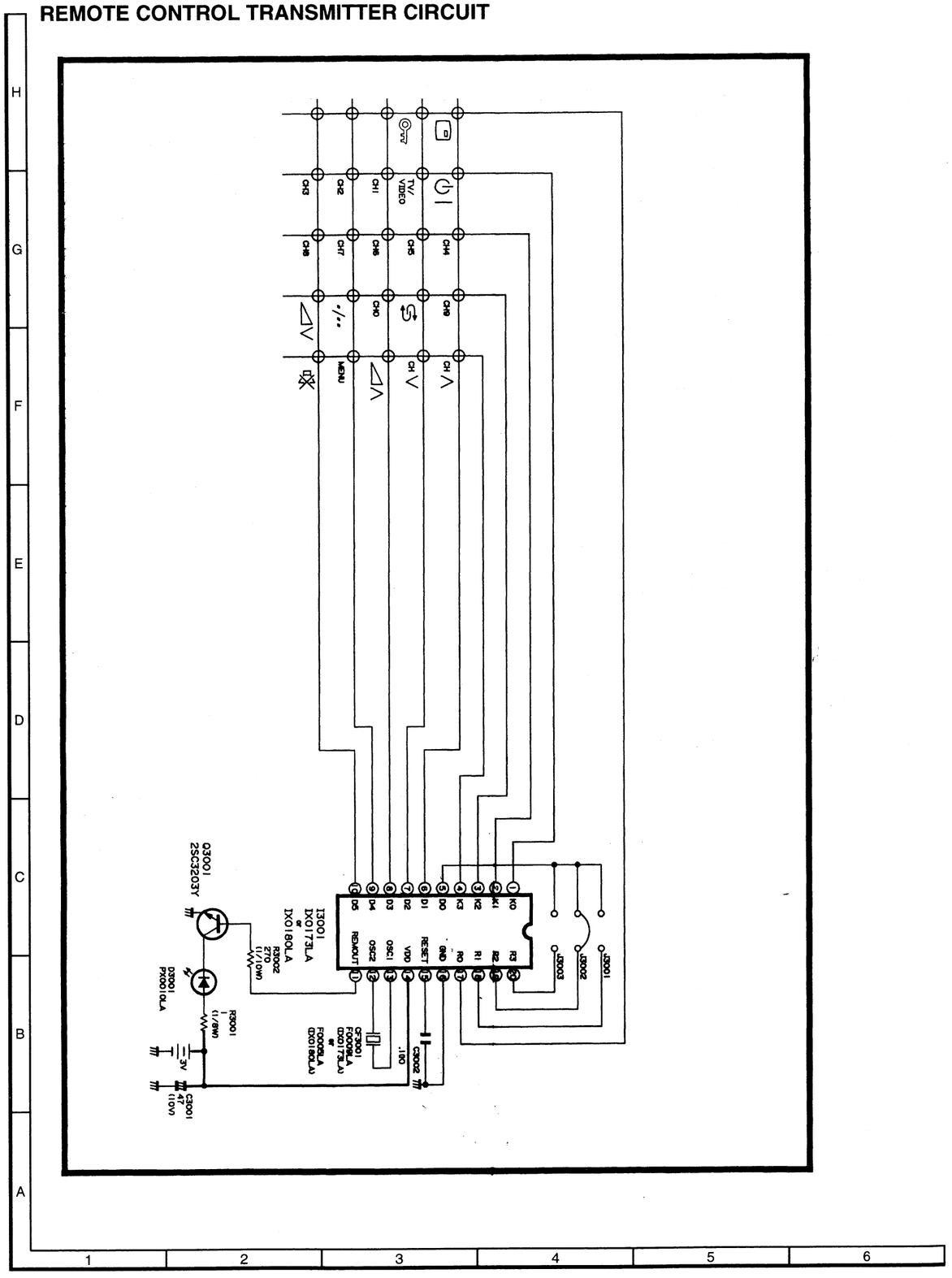
MAIN CIRCUIT (37DM-24S)

⚠ AND SHADED COMPONENTS=SAFETY RELATED PARTS

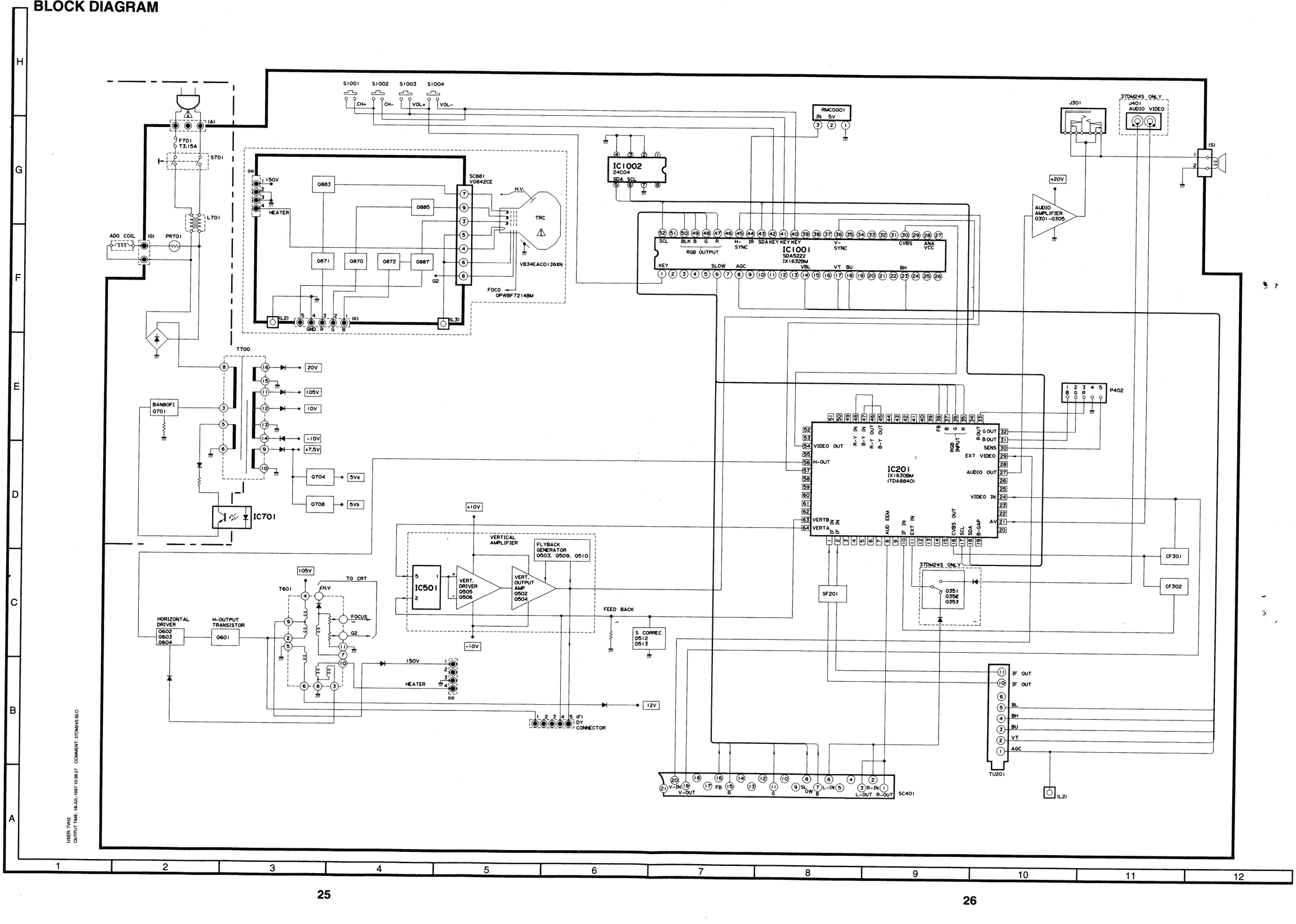


37DM-23S
37DM-24S

REMOTE CONTROL TRANSMITTER CIRCUIT



BLOCK DIAGRAM



USER: TVH2
OUTPUT TIME: 18-JUL-1997 10:36:27 COMMENT: 37DM24S.BLO

PARTS LIST

PARTS REPLACEMENT

Replacement parts which have these special safety characteristics identified in this manual: electrical components having such features are identified by "⚠" in the Replacement Parts Lists.
The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION
5. CODE
6. QUANTITY

MARK ★: SPARE PARTS-DELIVERY SECTION

Ref. No.	Part No.	★	Description	Code

PICTURE TUBE

⚠	VB34EAC0136*N	S	CRT Ass,y, 34 cm(14") with Deflection Yoke, Purity Magnet and Wedges	
⚠	QEARC0002BMZZ	S	Wire, Grounding strap	
	MSPRT0001CEFJ	S	CRT Spring	AA

PRINTED WIRING BOARD ASSEMBLIES (NOT REPLACEMENT ITEM)

MODEL 37DM-24S

DUNTK7213BMV0	-	Mother Unit	—
DUNTK7214BMV0	-	CRT Socket Unit	—

MODEL 37DM-23S

DUNTK7213BMV1	-	Mother Unit	—
DUNTK7214BMV1	-	CRT Socket Unit	—

Ref. No.	Part No.	★	Description	Code

PWB-A DUNTK7213BMV0/V1 MOTHER UNIT

TUNER

NOTE: THE PARTS HERE SHOWN ARE SUPPLIED AS AN ASSEMBLY BUT NOT INDEPENDENTLY.

⚠ TU201	RTUNH0124BMZZ	S	Tuner	

INTEGRATED CIRCUITS

IC201	RH-iX1630BMZZ	S	TDA8840	
IC501	VHSMT1A/A//-1	R	MT1A/A	
⚠ IC701	RH-FX0103BMZZ	S	Photo Coupler	
IC1001	RH-iX1632BMN0	S	SDA5222	
IC1002	RH-iX1640BMZZ	S	24C04	
IC1003	RH-iX0037CEZZ	R	Upc574J	AF

TRANSISTORS

Q201	VS2SC2412KQ-1	R	2SC2412	AA
Q202	VS2SA1037KQ-1	R	2SA1037	AA
Q209	RH-TX0130BMZZ	S	BC338-40	
Q301	RH-TX0102BMZZ	S	BC338	AB
Q302	RH-TX0105BMZZ	S	BC328	
Q303	VS2SC2412KQ-1	R	2SC2412	AA
Q304	VS2SA1037KQ-1	R	2SA1037	AA
Q305	VS2SC2412KQ-1	R	2SC2412	AA
Q351	VS2SC2412KQ-1	R	2SC2412 (37DM-24S)	AA
Q352	VS2SC2412KQ-1	R	2SC2412 (37DM-24S)	AA
Q353	VS2SC2412KQ-1	R	2SC2412 (37DM-24S)	AA
Q354	VS2SC2412KQ-1	R	2SC2412	AA
Q355	VS2SC2412KQ-1	R	2SC2412	AA
Q401	RH-TX0102BMZZ	S	BC338	AB
Q500	RH-TX0105BMZZ	S	BC328	

PWB-A DUNTK7213BMV0/V1
MOTHER UNIT(Continued)

TRANSISTORS(Continued)

Ref. No.	Part No.	★	Description	Code
Q501	VS2SC2412KQ-1	R	2SC2412	AA
Q502	RH-TX0118BMZZ	S	BC635-16	
Q503	VS2SA1037KQ-1	R	2SA1037	AA
Q504	RH-TX0131BMZZ	S	BC638	
Q505	RH-TX0142BMZZ	S	BC547	
Q506	VS2SC2412KQ-1	R	2SC2412	AA
Q509	RH-TX0102BMZZ	S	BC338	AB
Q510	RH-TX0102BMZZ	S	BC338	AB
Q601	RH-TX0132BMZZ	S	BU508DF1	
Q602	RH-TX0108BMZZ	S	BC635	
Q603	RH-TX0142BMZZ	S	BC547	
Q604	RH-TX0112BMZZ	S	BC636	AB
Q701	RH-TX0128BMZZ	S	BAN80F1	
Q702	RH-TX0102BMZZ	S	BC338	AB
Q703	RH-TX0102BMZZ	S	BC338	AB
Q704	RH-TX0130BMZZ	S	BC338-40	
Q705	RH-TX0142BMZZ	S	BC547	
Q706	VS2SC2412KQ-1	R	2SC2412	AA
Q708	RH-TX0130BMZZ	S	BC338-40	
Q801	VS2SC2412KQ-1	R	2SC2412	AA
Q901	VS2SC2412KQ-1	R	2SC2412	AA
Q1001	VS2SC2412KQ-1	R	2SC2412	AA
Q1003	VS2SC2412KQ-1	R	2SC2412	AA
Q1006	VS2SA1037KQ-1	R	2SA1037	AA
Q1007	VS2SC2412KQ-1	R	2SC2412	AA
Q1012	VS2SC2412KQ-1	R	2SC2412	AA

DIODES

D201	RH-DX0045BMZZ	S	1N4148	AA
D203	RH-DX0045BMZZ	S	1N4148	AA
D211	RH-DX0529BMZZ	S	Diode	
D212	RH-DX0045BMZZ	S	1N4148	AA
D213	RH-EX0413BMZZ	S	Zener Diode, 8.2V	
D301	RH-DX0045BMZZ	S	1N4148	AA
D351	RH-DX0045BMZZ	S	1N4148 (37DM-24S)	AA
D401	RH-EX0412BMZZ	S	Zener Diode, 7.5V	AB
D402	RH-EX0412BMZZ	S	Zener Diode, 7.5V	AB
D410	RH-EX0412BMZZ	S	Zener Diode, 7.5V	AB
D501	RH-DX0501BMZZ	S	1N4004	AA
D502	RH-DX0045BMZZ	S	1N4148	AA
D503	RH-EX0407BMZZ	S	Zener Diode, 4.7V	
D504	RH-DX0045BMZZ	S	1N4148	AA
D505	RH-DX0501BMZZ	S	1N4004	AA
D507	RH-DX0045BMZZ	S	1N4148	AA
D512	RH-DX0045BMZZ	S	1N4148	AA
D513	RH-DX0045BMZZ	S	1N4148	AA
D514	RH-DX0045BMZZ	S	1N4148	AA
D516	RH-DX0045BMZZ	S	1N4148	AA
D517	RH-DX0045BMZZ	S	1N4148	AA
D601	RH-EX0409BMZZ	S	Zener Diode, 5.6V	AA
D602	RH-DX0045BMZZ	S	1N4148	AA
D603	RH-DX0045BMZZ	S	1N4148	AA
D604	RH-DX0506BMZZ	S	Diode	
D605	RH-DX0529BMZZ	S	Diode	
D609	RH-DX0529BMZZ	S	Diode	
D610	RH-DX0045BMZZ	S	1N4148	AA
D619	RH-DX0045BMZZ	S	1N4148	AA
D620	RH-DX0045BMZZ	S	1N4148	AA
D701	RH-DX0571BMZZ	S	Diode	
D702	RH-DX0571BMZZ	S	Diode	
D703	RH-DX0571BMZZ	S	Diode	
D704	RH-DX0571BMZZ	S	Diode	
D705	RH-DX0539BMZZ	S	Diode	
D706	RH-DX0045BMZZ	S	1N4148	AA
D707	RH-EX0409BMZZ	S	Zener Diode, 5.6V	AA
D708	RH-DX0531BMZZ	S	Diode	
D709	RH-DX0590BMZZ	S	Diode	
D710	RH-DX0529BMZZ	S	Diode	
D712	RH-DX0533BMZZ	S	Diode	
D713	RH-EX0481BMZZ	S	Zener Diode	
D714	RH-EX0408BMZZ	S	Zener Diode, 5.1V	AA
D715	RH-EX0408BMZZ	S	Zener Diode, 5.1V	AA
D717	RH-EX0495BMZZ	S	Zener Diode	
D718	RH-EX0419BMZZ	S	Zener Diode, 19V	
D719	RH-DX0529BMZZ	S	Diode	
D720	RH-EX0407BMZZ	S	Zener Diode, 4.7V	
D723	RH-DX0045BMZZ	S	1N4148	AA
D802	RH-DX0045BMZZ	S	1N4148	AA
D1006	RH-DX0045BMZZ	S	1N4148	AA
D1007	RH-DX0045BMZZ	S	1N4148	AA
D1008	RH-DX0045BMZZ	S	1N4148	AA
D1009	RH-DX0045BMZZ	S	1N4148	AA
D1011	RH-PX0104BMZZ	S	Photodiode	
D1012	RH-DX0045BMZZ	S	1N4148	AA

PACKAGED CIRCUITS

PR701	RMPTP0028CEZZ	R	Positive Coefficient Thermistor	AG
X801	RCRSB0115BMZZ	S	Crystal	
X1001	RCRSB0225BMZZ	S	Crystal	

COIL AND TRANSFORMERS

CF301	RFiLC0020CEZZ	R	Filter	AE
CF302	RFiLC0270CEZZ	R	Filter	AD
L201	VP-DF470K0000	R	Peaking 47µH	AB
L202	VP-DF120K0000	R	Peaking 12µH	AB
L203	RBLN-0037CEZZ	R	Balun	AB
L205	RCiLi0001BMZZ	S	If Coil	
L301	VP-XF3R3K0000	R	Peaking 3.3µH	AB
L303	VP-DF3R3K0000	R	Peaking 3.3µH	AB
L304	VP-DF3R3K0000	R	Peaking 3.3µH	AB
L401	VP-DF3R3K0000	R	Peaking 3.3µH (37DM-24S)	AB
L601	VP-CF4R7K0000	R	Peaking 4.7µH	AB
L604	VP-CF220K0000	R	Peaking 22µH	AB
⚠ L701	RCiLF0157BMZZ	R	Coil	
L1002	VP-DF120K0000	R	Peaking 12µH	AB
L1003	VP-XF6R8K0000	R	Peaking 6.8µH	AB
L1004	VP-DF120K0000	R	Peaking 12µH	AB

PWB-A DUNTK7213BMV0/V1
MOTHER UNIT(Continued)

COIL AND TRANSFORMERS(Continued)

Ref. No.	Part No.	★	Description	Code
L1005	VP-DF120K0000	R	Peaking 12μH	AB
SF201	RFiLC0111BMZZ	S	Filter	
⚠ T601	RTRNF2047BMZZ	S	H-Volt Transformer	
⚠ T700	RTRNZ0535BMZZ	S	Transformer	

CAPACITORS

Ref. No.	Part No.	★	Description	Code
C201	VCKYTV1HF473Z	R	0.047 50V Ceramic	AB
C202	VCKYTV1HB223K	R	0.022 50V Ceramic	AB
C203	VCKYTV1HB332K	R	3300p 50V Ceramic	AA
C204	VCCCTV1HH680J	R	68p 50V Ceramic	AA
C205	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C206	VCEAGA1CW108M	R	1000 16V Electrolytic	AD
C207	VCKYTV1HF104Z	R	0.1 50V Ceramic	AA
C208	VCEAGA1HW474M	R	0.47 50V Electrolytic	AB
C209	VCKYTV1HB223K	R	0.022 50V Ceramic	AB
C210	VCKYTV1EF224Z	R	0.22 25V Ceramic	AA
C211	VCKYTV1HF103Z	R	0.01 50V Ceramic	AA
C213	VCEAGA1CW226M	R	22 16V Electrolytic	AB
C217	VCKYTV1HF473Z	R	0.047 50V Ceramic	AB
C218	VCCCTV1HH101J	R	100p 50V Ceramic	AA
C225	VCEAGA1CW227M	R	220 16V Electrolytic	AC
C226	VCCCTV1HH101J	R	100p 50V Ceramic	AA
C229	VCCCTV1HH100D	R	10p 50V Ceramic	AA
C234	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
C235	VCEAGA1CW108M	R	1000 16V Electrolytic	AD
C236	VCEAGA1CW227M	R	220 16V Electrolytic	AC
C242	VCKYTV1HF103Z	R	0.01 50V Ceramic (37DM-23S)	AA
C243	VCKYTV1HF103Z	R	0.01 50V Ceramic	AA
C244	VCKYTV1HF103Z	R	0.01 50V Ceramic	AA
C245	VCKYTV1HF103Z	R	0.01 50V Ceramic	AA
C250	VCKYTV1EF224Z	R	0.22 25V Ceramic	AA
C251	VCCCTV1HH180J	R	18p 50V Ceramic	AA
C252	VCKYTV1HF104Z	R	0.1 50V Ceramic	AA
C253	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C301	VCEAGA1HW105M	R	1 50V Electrolytic	AC
C302	VCEAGA1AW476M	R	47 10V Electrolytic	AA
C303	VCKYTV1HF473Z	R	0.047 50V Ceramic	AB
C304	VCEAGA1EW107M	R	100 25V Electrolytic	AD
C305	VCKYTV1HF473Z	R	0.047 50V Ceramic	AB
C306	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
C307	VCKYTV1HB223K	R	0.022 50V Ceramic	AB
C308	VCEAGA1AW227M	R	220 10V Electrolytic	AB
C309	VCEAGA2CW105M	R	1 160V Electrolytic	AB
C351	VCEAGA1CW476M	R	47 16V Electrolytic	AB
C401	VCEAGA1CW476M	R	47 16V Electrolytic (37DM-24S)	AB
C402	VCKYTV1HB102K	S	1000p 50V Ceramic (37DM-24S)	AA
C403	VCEAGA1HW225M	R	2.2 50V Electrolytic (37DM-24S)	AB
C407	VCKYTV1HB102K	R	1000p 50V Ceramic	AA
C408	VCCCTV1HH101J	R	100p 50V Ceramic	AA
C409	VCCCTV1HH101J	R	100p 50V Ceramic	AA
C410	VCEAGA1CW476M	R	47 16V Electrolytic	AB
C411	VCCCTV1HH101J	R	100p 50V Ceramic	AA
C412	VCCCTV1HH101J	R	100p 50V Ceramic	AA
C413	VCCCTV1HH820J	R	82p 50V Ceramic	AA
C414	VCCCTV1HH820J	R	82p 50V Ceramic	AA
C420	VCEAGA1CW476M	R	47 16V Electrolytic	AB
C421	VCEAGA1CW476M	R	47 16V Electrolytic	AB
C422	VCEAGA1CW476M	R	47 16V Electrolytic	AB
C501	VCEAGA1EW227M	R	220 25V Electrolytic	AC
C502	VCEAGA1VW107M	R	100 35V Electrolytic	AC
C503	VCCSTV1HL331J	R	330p 50V Ceramic	AA
C504	VCCSTV1HL331J	R	330p 50V Ceramic	AA
C505	VCEAGA1HW475M	R	4.7 50V Electrolytic	AB
C508	RC-FZ9104BMNJ	S	0.1 63V Mylar	AB
C511	VCKYTV1HB222K	R	2200p 50V Ceramic	AA
C512	VCKYTV1HB102K	R	1000p 50V Ceramic	AA
C514	VCEAGA1EW227M	R	220 25V Electrolytic	AC
C515	VCKYPA1HB561K	R	560p 50V Ceramic	AA
C517	VCKYTV1HB333K	R	0.033 50V Ceramic	AA
C519	VCEAGA1CW107M	R	100 16V Electrolytic	AB
C520	VCEAGA1HW105M	R	1 50V Electrolytic	AC
C601	RC-FZ0144BMZZ	S	Capacitor	
C602	RC-KZ0035CEZZ	R	220p 2kV Ceramic	AB
C603	RC-FZ9223BMNJ	S	0.022 63V Mylar	AB
C604	VCEAGA1AW227M	R	220 10V Electrolytic	AB
C605	RC-FZ9104BMNJ	S	0.1 63V Mylar	AB
C606	RC-FZ6474BMNJ	S	0.47 260V Mylar	AE
C607	VCCCPA1HH390J	R	39p 50V Ceramic	AA
C608	VCEAGA2CW105M	R	1 160V Electrolytic	AB
C609	VCKYTV1HF103Z	R	0.01 50V Ceramic	AA
C610	VCKYTV1HF103Z	R	0.01 50V Ceramic	AA
C612	VCEAGA1HW105M	R	1 50V Electrolytic	AC
C613	VCKYTV1HB472K	R	4700p 50V Ceramic	AA
C614	VCKYTV1HF103Z	R	0.01 50V Ceramic	AA
C617	RC-FZ9104BMNJ	S	0.1 63V Mylar	AB
C620	RC-FZ9104BMNJ	S	0.1 63V Mylar	AB
C622	VCEAGA1AW227M	R	220 10V Electrolytic	AB
C623	VCCSTV1HL471J	R	470p 50V Ceramic	AA
C625	RC-FZ9224BMNJ	S	0.22 63V Mylar	AC
⚠ C702	RC-FZ0070BMZZ	S	0.1 250V Mylar	
C703	RC-KZ0029CEZZ	R	0.01 250V Ceramic	AC
C704	RC-KZ0029CEZZ	R	0.01 250V Ceramic	AC
C705	RC-KZ0029CEZZ	R	0.01 250V Ceramic	AC
C706	RC-EZ0115BMZZ	S	68 400V Electrolytic	
C707	RC-FZ9153BMNJ	S	0.015 63V Mylar	AB
C708	RC-FZ9683BMNJ	S	0.068 63V Mylar	
C709	RC-FZ9332BMNJ	S	3300p 63V Mylar	AB
C710	VCKYPA1HB102K	R	1000p 50V Ceramic	AA
C711	VCEAGH2CW107M	R	100 160V Electrolytic	AE
C712	VCEAGA1CW227M	R	220 16V Electrolytic	AC
C713	VCEAGA1CW108M	R	1000 16V Electrolytic	AD
C714	VCEAGA1AW477M	R	470 10V Electrolytic	AC
C715	RC-FZ9224BMNJ	S	0.22 63V Mylar	AC
C716	VCEAGA1CW107M	R	100 16V Electrolytic	AB
C717	VCKYTV1HF104Z	R	0.1 50V Ceramic	AA
C718	RC-KZ0035CEZZ	R	220p 2kV Ceramic	AB

Ref. No.	Part No.	★	Description			Code
PWB-A DUNTK7213BMV0/V1						
MOTHER UNIT(Continued)						
CAPACITORS(Continued)						
C719	VCEAGA1VW227M	R	220	35V	Electrolytic	AC
C721	VCKYTV1HF104Z	R	0.1	50V	Ceramic	AA
⚠ C722	RC-KZ0106GEZZ	R	3300p	4kV	Ceramic	AG
C723	RC-FZ9224BMNJ	S	0.22	63V	Mylar	AC
C724	VCEAGA1CW106M	R	10	16V	Electrolytic	AA
C725	RC-KZ0035CEZZ	R	220p	2kV	Ceramic	AB
C726	VCKYPA1HB471K	R	470p	50V	Ceramic	AA
C728	RC-KZ0029CEZZ	R	0.01	250V	Ceramic	AC
C801	VCKYTV1HF104Z	R	0.1	50V	Ceramic	AA
C802	VCKYTV1HF104Z	R	0.1	50V	Ceramic	AA
C803	VCKYTV1HF104Z	R	0.1	50V	Ceramic	AA
C804	VCEAGA1HW336M	R	33	50V	Electrolytic	AB
C805	VCKYTV1HF104Z	R	0.1	50V	Ceramic	AA
C806	VCEAGA1CW107M	R	100	16V	Electrolytic	AB
C807	VCKYTV1HB223K	R	0.022	50V	Ceramic	AB
C809	VCKYTV1HB472K	R	4700p	50V	Ceramic	AA
C810	VCKYTV1HF104Z	R	0.1	50V	Ceramic	AA
C813	VCKYTV1HF473Z	R	0.047 (37DM-24S)	50V	Ceramic	AB
C815	VCEAGA1HW225M	R	2.2	50V	Electrolytic	AB
C816	VCKYTV1HB102K	R	1000p	50V	Ceramic	AA
C817	VCKYTV1HB102K	R	1000p	50V	Ceramic	AA
C820	VCCCTV1HH180J	R	18p	50V	Ceramic	AA
C825	VCKYTV1HF104Z	R	0.1	50V	Ceramic	AA
C826	VCEAGA1HW475M	R	4.7	50V	Electrolytic	AB
C827	VCCCTV1HH101J	R	100p	50V	Ceramic	AA
C828	VCCCTV1HH101J	R	100p	50V	Ceramic	AA
C829	VCCCTV1HH101J	R	100p	50V	Ceramic	AA
C901	VCKYTV1HF224Z	R	0.22	50V	Ceramic	AC
C906	VCKYTV1EF224Z	R	0.22	25V	Ceramic	AA
C1002	VCEAGA1HW475M	R	4.7	50V	Electrolytic	AB
C1004	VCEAGA1AW476M	R	47	10V	Electrolytic	AA
C1008	VCCCTV1HH220J	R	22p	50V	Ceramic	AA
C1009	VCCCTV1HH220J	R	22p	50V	Ceramic	AA
C1012	VCKYTV1HF103Z	R	0.01	50V	Ceramic	AA
C1015	VCKYTV1HF104Z	R	0.1	50V	Ceramic	AA
C1016	VCKYTV1HF473Z	R	0.047	50V	Ceramic	AB
C1017	VCCCTV1HH680J	R	68p	50V	Ceramic	AA
C1018	VCCCTV1HH390J	R	39p	50V	Ceramic	AA
C1019	VCEAGA1CW106M	R	10	16V	Electrolytic	AA
C1020	VCKYTV1HF473Z	R	0.047	50V	Ceramic	AB
C1021	VCKYTV1HB333K	R	0.033	50V	Ceramic	AA
C1022	VCKYTV1HB333K	R	0.033	50V	Ceramic	AA
C1023	VCKYTV1EF224Z	R	0.22	25V	Ceramic	AA
C1024	VCCCTV1HH151J	R	150p	50V	Ceramic	AA
C1026	VCCCTV1HH101J	R	100p	50V	Ceramic	AA
C1027	VCKYTV1HF104Z	R	0.1	50V	Ceramic	AA
C1030	VCKYTV1HB102K	R	1000p	50V	Ceramic	AA
C1031	VCKYTV1EF224Z	R	0.22	25V	Ceramic	AA
C1033	VCKYTV1HB102K	R	1000p	50V	Ceramic	AA
RESISTORS						
R201	VRS-TV1JD102J	R	1k	1/16W	Metal Oxide	AA
R202	VRS-TV1JD470J	R	47	1/16W	Metal Oxide	AA
R203	VRS-TV1JD561J	R	560	1/16W	Metal Oxide	AA
R204	VRS-TV1JD475J	R	4.7M	1/16W	Metal Oxide	AA
R205	VRS-TV1JD333J	R	33k	1/16W	Metal Oxide	AA
R209	VRS-TV1JD473J	R	47k	1/16W	Metal Oxide	AA
R210	VRS-TV1JD101J	R	100	1/16W	Metal Oxide	AA
R211	VRS-TV1JD101J	R	100	1/16W	Metal Oxide	AA
R225	VRS-TV1JD181J	R	180	1/16W	Metal Oxide	AA
R228	VRS-TV1JD332J	R	3.3k	1/16W	Metal Oxide	AA
R231	VRS-TV1JD183J	R	18k	1/16W	Metal Oxide	AA
R232	VRS-TV1JD223J	R	22k	1/16W	Metal Oxide	AA
R233	VRS-TV1JD471J	R	470	1/16W	Metal Oxide	AA
R234	VRS-TV1JD223J	R	22k	1/16W	Metal Oxide	AA
R235	VRS-TV1JD563J	R	56k	1/16W	Metal Oxide	AA
R236	VRD-RA2HD122J	R	1.2k	1/2W	Carbon	AA
R238	VRS-TV1JD152J	R	1.5k	1/16W	Metal Oxide	AA
R239	VRS-TV1JD102J	R	1k	1/16W	Metal Oxide	AA
⚠ R240	RR-XZ0100BMZZ	S	1	1/3W	Fuse Resistor	
R248	VRS-TV1JD102J	R	1k	1/16W	Metal Oxide	AA
R250	VRD-RA2BE820J	R	82	1/8W	Carbon	AA
R253	VRS-TV1JD470J	R	47	1/16W	Metal Oxide	AA
R254	VRS-TV1JD272J	R	2.7k	1/16W	Metal Oxide	AA
R256	VRS-TV1JD272J	R	2.7k	1/16W	Metal Oxide	AA
R257	VRS-TV1JD272J	R	2.7k	1/16W	Metal Oxide	AA
R260	VRS-TV1JD472J	R	4.7k	1/16W	Metal Oxide	AA
R301	VRS-TV1JD471J	R	470	1/16W	Metal Oxide	AA
R302	VRS-TV1JD333J	R	33k	1/16W	Metal Oxide	AA
R303	VRS-TV1JD104J	R	100k	1/16W	Metal Oxide	AA
R304	VRS-TV1JD103J	R	10k	1/16W	Metal Oxide	AA
⚠ R305	RR-XZ0204BMZZ	S	2.2	1/2W	Fuse Resistor	
R306	VRS-TV1JD561J	R	560	1/16W	Metal Oxide	AA
R307	VRS-TV1JD104J	R	100k	1/16W	Metal Oxide	AA
R308	VRS-TV1JD101J	R	100	1/16W	Metal Oxide	AA
R309	VRS-TV1JD103J	R	10k	1/16W	Metal Oxide	AA
R310	VRS-TV1JD471J	R	470	1/16W	Metal Oxide	AA
R311	VRS-TV1JD471J	R	470	1/16W	Metal Oxide	AA
R312	VRD-RA2HD472J	R	4.7k	1/2W	Carbon	AA
R313	VRD-RA2HD472J	R	4.7k	1/2W	Carbon	AA
R314	VRD-RA2HD472J	R	4.7k	1/2W	Carbon	AA
R315	VRS-TV1JD821J	R	820	1/16W	Metal Oxide	AA
R316	VRD-RA2BE103J	R	10k	1/8W	Carbon	AA
R317	VRS-TV1JD102J	R	1k	1/16W	Metal Oxide	AA
R318	VRS-TV1JD153J	R	15k	1/16W	Metal Oxide	AA
R351	VRS-TV1JD563J	R	56k (37DM-24S)	1/16W	Metal Oxide	AA
R352	VRS-TV1JD103J	R	10k (37DM-24S)	1/16W	Metal Oxide	AA
R354	VRS-TV1JD223J	R	22k (37DM-24S)	1/16W	Metal Oxide	AA
R355	VRS-TV1JD104J	R	100k (37DM-24S)	1/16W	Metal Oxide	AA
R356	VRS-TV1JD681J	R	680 (37DM-24S)	1/16W	Metal Oxide	AA
R357	VRS-TV1JD472J	R	4.7k (37DM-24S)	1/16W	Metal Oxide	AA
R358	VRS-TV1JD103J	R	10k (37DM-24S)	1/16W	Metal Oxide	AA

PWB-A DUNTK7213BMV0/V1
MOTHER UNIT(Continued)

RESISTORS(Continued)

Ref. No.	Part No.	★	Description	Code
R359	VRS-TV1JD563J	R	56k 1/16W Metal Oxide (37DM-24S)	AA
R360	VRS-TV1JD154J	R	150k 1/16W Metal Oxide (37DM-24S)	AA
R361	VRS-TV1JD101J	R	100 1/16W Metal Oxide (37DM-24S)	AA
R362	VRS-TV1JD222J	R	2.2k 1/16W Metal Oxide	AA
R363	VRS-TV1JD102J	R	1k 1/16W Metal Oxide	AA
R364	VRS-TV1JD471J	R	470 1/16W Metal Oxide	AA
R365	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R366	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R402	VRS-TV1JD104J	R	100k 1/16W Metal Oxide (37DM-24S)	AA
R403	VRS-TV1JD102J	R	1k 1/16W Metal Oxide (37DM-24S)	AA
R404	VRS-TV1JD102J	R	1k 1/16W Metal Oxide	AA
R407	VRD-RA2HD680J	R	68 1/2W Carbon	AA
R408	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R410	VRD-RA2BE820J	R	82 1/8W Carbon	AA
R412	VRS-TV1JD222J	R	2.2k 1/16W Metal Oxide	AA
R414	VRD-RA2BE820J	R	82 1/8W Carbon	AA
R415	VRS-TV1JD222J	R	2.2k 1/16W Metal Oxide	AA
R416	VRS-TV1JD102J	R	1k 1/16W Metal Oxide	AA
R417	VRD-RA2BE820J	R	82 1/8W Carbon	AA
R418	VRS-TV1JD102J	R	1k 1/16W Metal Oxide	AA
R419	VRS-TV1JD222J	R	2.2k 1/16W Metal Oxide	AA
R420	VRD-RA2BE820J	R	82 1/8W Carbon	AA
R421	VRS-TV1JD470J	R	47 1/16W Metal Oxide	AA
R422	VRS-TV1JD104J	R	100k 1/16W Metal Oxide	AA
R423	VRS-TV1JD472J	R	4.7k 1/16W Metal Oxide	AA
R424	VRS-TV1JD103J	R	10k 1/16W Metal Oxide	AA
R425	VRS-TV1JD104J	R	100k 1/16W Metal Oxide	AA
R426	VRS-TV1JD682J	R	6.8k 1/16W Metal Oxide	AA
R427	VRS-TV1JD682J	R	6.8k 1/16W Metal Oxide	AA
R428	VRS-TV1JD104J	R	100k 1/16W Metal Oxide	AA
R434	VRS-TV1JD102J	R	1k 1/16W Metal Oxide	AA
R435	VRS-TV1JD472J	R	4.7k 1/16W Metal Oxide	AA
R436	VRS-TV1JD472J	R	4.7k 1/16W Metal Oxide	AA
R437	VRS-TV1JD472J	R	4.7k 1/16W Metal Oxide	AA
R500	VRS-TV1JD473J	R	47k 1/16W Metal Oxide	AA
R501	VRD-RA2HD102J	R	1k 1/2W Carbon	AA
R502	VRD-RA2HD182J	R	1.8k 1/2W Carbon	AA
R503	VRS-TV1JD472J	R	4.7k 1/16W Metal Oxide	AA
⚠ R504	RR-XZ0109BMZZ	S	5.6 1/3W Fuse Resistor	
R505	VRS-TV1JD182J	R	1.8k 1/16W Metal Oxide	AA
⚠ R506	RR-XZ0100BMZZ	S	1 1/3W Fuse Resistor	
R507	VRD-RA2HD561J	R	560 1/2W Carbon	AA
R508	VRS-TV1JD330J	R	33 1/16W Metal Oxide	AA
R510	VRS-TV1JD153J	R	15k 1/16W Metal Oxide	AA
R511	VRS-TV1JD103J	R	10k 1/16W Metal Oxide	AA
⚠ R512	RR-XZ0109BMZZ	S	5.6 1/3W Fuse Resistor	
R513	VRS-TV1JD182J	R	1.8k 1/16W Metal Oxide	AA
R514	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R515	VRS-TV1JD821J	R	820 1/16W Metal Oxide	AA
R516	VRS-TV1JD472J	R	4.7k 1/16W Metal Oxide	AA
R518	VRD-RA2HD1R8J	R	1.8 1/2W Carbon	AA
R519	VRS-TV1JD103J	R	10k 1/16W Metal Oxide	AA
R520	VRS-TV1JD222J	R	2.2k 1/16W Metal Oxide	AA
R521	VRD-RA2BE564J	R	560k 1/8W Carbon	AA
R522	VRS-TV1JD332J	R	3.3k 1/16W Metal Oxide	AA
R523	VRD-RA2BE473J	R	47k 1/8W Carbon	AA
R525	VRS-TV1JD122J	R	1.2k 1/16W Metal Oxide	AA
R528	VRS-TV1JD184J	R	180k 1/16W Metal Oxide	AA
R529	VRS-TV1JD102J	R	1k 1/16W Metal Oxide	AA
R530	VRS-TV1JD332J	R	3.3k 1/16W Metal Oxide	AA
R531	VRS-TV1JD101J	R	100 1/16W Metal Oxide	AA
R601	VRD-RA2BE123J	R	12k 1/8W Carbon	AA
R602	VRD-RA2HD331J	R	330 1/2W Carbon	AA
⚠ R603	RR-XZ0200BMZZ	S	1 1/2W Fuse Resistor	
R604	VRD-RA2EE6R8J	R	6.8 1/4W Carbon	AA
R605	VRD-RA2EE5R6J	R	5.6 1/4W Carbon	AA
R606	VRD-RA2HD2R2J	R	2.2 1/2W Carbon	AA
R607	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA
R608	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA
R609	VRN-VV3ABR47J	R	0.47 1W Metal Film	AA
⚠ R611	RR-XZ0242BMZZ	S	Resistor	
R612	VRS-TV1JD153J	R	15k 1/16W Metal Oxide	AA
R613	VRS-TV1JD101J	R	100 1/16W Metal Oxide	AA
R615	VRS-TV1JD153J	R	15k 1/16W Metal Oxide	AA
R616	VRD-RA2HD270J	R	27 1/2W Carbon	AA
R618	VRD-RA2HD102J	R	1k 1/2W Carbon	AA
R619	VRD-RA2HD270J	R	27 1/2W Carbon	AA
R620	VRD-RA2HD102J	R	1k 1/2W Carbon	AA
R621	VRS-TV1JD103J	R	10k 1/16W Metal Oxide	AA
R622	VRS-TV1JD153J	R	15k 1/16W Metal Oxide	AA
R623	VRS-TV1JD224J	R	220k 1/16W Metal Oxide	AA
R624	VRS-TV1JD274J	R	270k 1/16W Metal Oxide	AA
R632	VRD-RA2HD471J	R	470 1/2W Carbon	AA
R633	VRS-TV1JD153J	R	15k 1/16W Metal Oxide	AA
R702	VRD-RA2HD224J	R	220k 1/2W Carbon	AA
R703	VRW-KP3HC5R6K	R	5.6 5W Cement	AC
R704	VRD-RA2HD564J	R	560k 1/2W Carbon	AA
R705	VRD-RA2HD564J	R	560k 1/2W Carbon	AA
R706	VRN-VV3ABR47J	R	0.47 1W Metal Film	AA
R707	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R708	VRD-RA2HD102J	R	1k 1/2W Carbon	AA
R709	VRD-RA2BE330J	R	33 1/8W Carbon	AA
R710	VRD-RA2HD561J	R	560 1/2W Carbon	AA
R711	VRD-RA2BE561J	R	560 1/8W Carbon	AA
R712	VRD-RA2EE561J	R	560 1/4W Carbon	AA
R713	VRS-TV1JD220J	R	22 1/16W Metal Oxide	AA
R714	VRS-TV1JD101J	R	100 1/16W Metal Oxide	AA
R715	VRS-TV1JD681J	R	680 1/16W Metal Oxide	AA
R716	VRS-TV1JD273J	R	27k 1/16W Metal Oxide	AA
R717	VRS-TV1JD4R7J	R	4.7 1/16W Metal Oxide	AA
R718	VRS-TV1JD333J	R	33k 1/16W Metal Oxide	AA
R720	VRD-RA2BE223J	R	22k 1/8W Carbon	AA
⚠ R721	VRC-UA2HG825K	R	8.2M 1/2W Solid	AA
⚠ R722	VRC-UA2HG825K	R	8.2M 1/2W Solid	AA
R724	VRS-TV1JD471J	R	470 1/16W Metal Oxide	AA

PWB-A DUNTK7213BMV0/V1

MOTHER UNIT(Continued)

RESISTORS(Continued)

Ref. No.	Part No.	★	Description			Code
R725	VRS-TV1JD222J	R	2.2k	1/16W	Metal Oxide	AA
R729	VRD-RA2EE472J	R	4.7k	1/4W	Carbon	AA
R801	VRS-TV1JD104J	R	100k	1/16W	Metal Oxide	AA
R802	VRS-TV1JD221J	R	220	1/16W	Metal Oxide	AA
R803	VRS-TV1JD4R7J	R	4.7	1/16W	Metal Oxide	AA
R804	VRS-TV1JD393J	R	39k	1/16W	Metal Oxide	AA
R805	VRS-TV1JD395J	R	3.9M	1/16W	Metal Oxide	AA
R806	VRS-TV1JD2R2J	R	2.2	1/16W	Metal Oxide	AA
R807	VRS-TV1JD221J	R	220	1/16W	Metal Oxide	AA
R809	VRS-TV1JD101J	R	100	1/16W	Metal Oxide	AA
R810	VRS-TV1JD101J	R	100	1/16W	Metal Oxide	AA
R814	VRS-TV1JD101J	R	100	1/16W	Metal Oxide	AA
R815	VRS-TV1JD101J	R	100	1/16W	Metal Oxide	AA
R816	VRS-TV1JD101J	R	100	1/16W	Metal Oxide	AA
R823	VRS-TV1JD820J	R	82 (37DM-24S)	1/16W	Metal Oxide	AA
R825	VRS-TV1JD682J	R	6.8k	1/16W	Metal Oxide	AA
R834	VRS-TV1JD102J	R	1k	1/16W	Metal Oxide	AA
R836	VRD-RA2BE681J	R	680	1/8W	Carbon	AA
R837	VRS-TV1JD000J	R	0	1/16W	Metal Oxide	AA
R838	VRS-TV1JD821J	R	820	1/16W	Metal Oxide	AA
R901	VRS-TV1JD102J	R	1k	1/16W	Metal Oxide	AA
R902	VRS-TV1JD103J	R	10k	1/16W	Metal Oxide	AA
R903	VRD-RA2BE470J	R	47	1/8W	Carbon	AA
R1001	VRS-TV1JD472J	R	4.7k	1/16W	Metal Oxide	AA
R1002	VRS-TV1JD472J	R	4.7k	1/16W	Metal Oxide	AA
R1003	VRS-TV1JD103J	R	10k	1/16W	Metal Oxide	AA
R1004	VRS-TV1JD392J	R	3.9k	1/16W	Metal Oxide	AA
R1005	VRS-TV1JD102J	R	1k	1/16W	Metal Oxide	AA
R1006	VRS-TV1JD102J	R	1k	1/16W	Metal Oxide	AA
R1007	VRS-TV1JD102J	R	1k	1/16W	Metal Oxide	AA
R1008	VRS-TV1JD102J	R	1k	1/16W	Metal Oxide	AA
R1009	VRS-TV1JD391J	R	390	1/16W	Metal Oxide	AA
R1010	VRS-TV1JD391J	R	390	1/16W	Metal Oxide	AA
R1011	VRS-TV1JD391J	R	390	1/16W	Metal Oxide	AA
R1013	VRS-TV1JD561J	R	560	1/16W	Metal Oxide	AA
R1016	VRS-TV1JD101J	R	100	1/16W	Metal Oxide	AA
R1017	VRS-TV1JD473J	R	47k	1/16W	Metal Oxide	AA
R1021	VRS-TV1JD223J	R	22k	1/16W	Metal Oxide	AA
R1022	VRS-TV1JD103J	R	10k	1/16W	Metal Oxide	AA
R1024	VRS-TV1JD101J	R	100	1/16W	Metal Oxide	AA
R1026	VRS-TV1JD103J	R	10k	1/16W	Metal Oxide	AA
R1027	VRS-TV1JD332J	R	3.3k	1/16W	Metal Oxide	AA
R1028	VRS-TV1JD332J	R	3.3k	1/16W	Metal Oxide	AA
R1029	VRS-TV1JD103J	R	10k	1/16W	Metal Oxide	AA
R1030	VRD-RA2BE392J	R	3.9k	1/8W	Carbon	AA
R1034	VRS-TV1JD153J	R	15k	1/16W	Metal Oxide	AA
R1035	VRS-TV1JD104J	R	100k	1/16W	Metal Oxide	AA
R1036	VRD-RA2BE823J	R	82k	1/8W	Carbon	AA
R1037	VRS-TV1JD103J	R	10k	1/16W	Metal Oxide	AA
R1038	VRS-TV1JD221J	R	220	1/16W	Metal Oxide	AA
R1039	VRS-TV1JD221J	R	220	1/16W	Metal Oxide	AA
R1041	VRS-TV1JD221J	R	220	1/16W	Metal Oxide	AA
R1048	VRD-RA2HD472J	R	4.7k	1/2W	Carbon	AA
R1049	VRD-RA2HD472J	R	4.7k	1/2W	Carbon	AA
R1056	VRS-TV1JD101J	R	100	1/16W	Metal Oxide	AA
R1058	VRS-TV1JD472J	R	4.7k	1/16W	Metal Oxide	AA
R1059	VRD-RA2HD472J	R	4.7k	1/2W	Carbon	AA
R1068	VRS-TV1JD683J	R	68k	1/16W	Metal Oxide	AA
R1069	VRS-TV1JD682J	R	6.8k	1/16W	Metal Oxide	AA
R1070	VRS-TV1JD682J	R	6.8k	1/16W	Metal Oxide	AA
R1071	VRS-TV1JD682J	R	6.8k	1/16W	Metal Oxide	AA
R1072	VRS-TV1JD684J	R	680k	1/16W	Metal Oxide	AA
R1073	VRS-TV1JD222J	R	2.2k	1/16W	Metal Oxide	AA
R1075	VRS-TV1JD103J	R	10k	1/16W	Metal Oxide	AA
R1077	VRS-TV1JD223J	R	22k	1/16W	Metal Oxide	AA
R1078	VRS-TV1JD271J	R	270	1/16W	Metal Oxide	AA
R1080	VRS-TV1JD332J	R	3.3k	1/16W	Metal Oxide	AA
R1081	VRS-TV1JD101J	R	100	1/16W	Metal Oxide	AA
R1082	VRS-TV1JD101J	R	100	1/16W	Metal Oxide	AA
R1083	VRD-RA2BE331J	R	330	1/8W	Carbon	AA
R1085	VRD-RA2BE101J	R	100	1/8W	Carbon	AA

MISCELLANEOUS PARTS

Ref. No.	Part No.	★	Description	Code
J301	QJAKJ0047CEZZ	R	Jack	AD
J401	QJAKF0014CEZZ	R	Jack(37DM-24S)	AE
P201	QTiPM0017CEFM	R	Tip	AA
P301	QPLGN0241CEZZ	R	Plug	AA
P402	QPLGN0561CEZZ	R	Plug	AB
P601	QPLGN0505CEZZ	R	Plug	AB
P602	QPLGN0461CEZZ	R	Plug	AB
⚠ P701	QPLGN0304CEZZ	R	Plug	AB
⚠ P702	QPLGN0207CEZZ	R	Plug	AA
P881	QTiPM0017CEFM	R	Tip	AA
P882	QPLGN0561CEZZ	R	Plug	AB
P883	QTiPM0017CEFM	R	Tip	AA
SC401	QSOCZ0106BMZZ	S	Socket	
FB301	RBLN-0037CEZZ	R	Balun	AB
FB304	RBLN-0037CEZZ	R	Balun	AB
FB351	RBLN-0037CEZZ	R	Balun	AB
FB601	RBLN-0037CEZZ	R	Balun	AB
FB1001	RBLN-0037CEZZ	R	Balun	AB
FB1002	RBLN-0037CEZZ	R	Balun	AB
⚠ FH1001	QFSHD1017CEZZ	R	Fuse Holder	AC
⚠ FH1002	QFSHD1018CEZZ	R	Fuse Holder	AC
⚠ F701	QFS-C3226CEZZ	R	Fuse T3.15A	AE
RMC0001	RRMCU0222CEZZ	R	Remote Receiver	AL
⚠ S701	QSW-P0588CEZZ	R	Power	AP
S1001	QSW-K0079GEZZ	J	Channel(+)	AB
S1002	QSW-K0079GEZZ	J	Channel(-)	AB
S1003	QSW-K0079GEZZ	J	Sound Volume(+)	AB
S1004	QSW-K0079GEZZ	J	Sound Volume(-)	AB
	MSPRK1003BMFW	S	Spring	
	LHLDK1501BM00	S	AC Cord Holder	
⚠	QACCZ2100BMSA	S	AC Cord	
	VSP0080PBL6YS	R	Speaker	
	QCNW-2704BMZZ	S	Connecting Cord	
	QCNW-2705BMZZ	S	Connecting Cord	
	QCNW-2676BMZZ	S	Connecting Cord	

Ref. No.	Part No.	★	Description	Code

PWB-A DUNTK7213BMV0/V1
MOTHER UNIT(Continued)

MISCELLANEOUS PARTS(Continued)

	QCNW-2712BMZZ	S	Connecting Cord
	QCNW-3053BMZZ	S	Connecting Cord

—— End of RWB-A ——

Ref. No.	Part No.	★	Description	Code

PWB-B DUNTK7214BMV0/V1
CRT SOCKET UNIT

TRANSISTORS

Q870	RH-TX0181BMZZ	S	BF422
Q871	RH-TX0181BMZZ	S	BF422
Q872	RH-TX0181BMZZ	S	BF422
Q883	RH-TX0180BMZZ	S	BF421
Q885	RH-TX0180BMZZ	S	BF421
Q887	RH-TX0180BMZZ	S	BF421

DIODES

D811	RH-DX0045BMZZ	S	IN4148
D812	RH-DX0045BMZZ	S	IN4148
D880	RH-DX0045BMZZ	S	IN4148
D881	RH-DX0045BMZZ	S	IN4148
D882	RH-DX0045BMZZ	S	IN4148

COIL

L881	VP-CF120K0000	R	Peaking 12μH	AB

CAPACITORS

C871	VCCSTV1HL471J	R	470p	50V	Ceramic	AA
C872	VCCSTV1HL471J	R	470p	50V	Ceramic	AA
C873	VCCSTV1HL471J	R	470p	50V	Ceramic	AA
C874	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C876	RC-KZ0023CEZZ	R	4700p	2kV	Ceramic	AD
C878	VCEAGA2DW106M	R	10	200V	Electrolytic	AC
C880	VCCSTV1HL471J	R	470p	50V	Ceramic	AA
C881	VCCSTV1HL471J	R	470p	50V	Ceramic	AA
C882	VCCSTV1HL471J	R	470p	50V	Ceramic	AA

RESISTORS

R879	VRS-TV1JD471J	R	470 1/16W	Metal Oxide	AA
R880	VRS-TV1JD471J	R	470 1/16W	Metal Oxide	AA
R881	VRS-TV1JD471J	R	470 1/16W	Metal Oxide	AA
R882	VRS-VV3DB153J	R	15k 2W	Metal Oxide	AA
R883	VRC-MA2HG272K	R	2.7k 1/2W	Solid	AA
R884	VRS-VV3DB153J	R	15k 2W	Metal Oxide	AA
R885	VRC-MA2HG272K	R	2.7k 1/2W	Solid	AA
R886	VRS-VV3DB153J	R	15k 2W	Metal Oxide	AA
R887	VRC-MA2HG272K	R	2.7k 1/2W	Solid	AA
R888	VRS-TV1JD471J	R	470 1/16W	Metal Oxide	AA
R892	VRS-TV1JD102J	R	1k 1/16W	Metal Oxide	AA
R893	VRS-TV1JD102J	R	1k 1/16W	Metal Oxide	AA
R894	VRS-TV1JD102J	R	1k 1/16W	Metal Oxide	AA
R898	VRS-TV1JD471J	R	470 1/16W	Metal Oxide	AA
R899	VRS-TV1JD471J	R	470 1/16W	Metal Oxide	AA

MISCELLANEOUS PARTS

P851	QPLGN0461CEZZ	R	Connector	
⚠ SC881	QSOCV0842CEZZ	R	Socket	AH

—— End of PWB-B——

Ref. No.	Part No.	★	Description	Code

SUPPLIED ACCESSORIES

ACCESSORIES

QANTR0081CEZZ	R	Rod Antenna	AP
RRMCG1059BMSA	S	Infrared R-C	
TiNS-6474BMN0	S	Instruction Book	

ACCESSORIES (NOT REPLACEMENT ITEM)

UBATU0007UMZZ	-	Battery	—

—— End of SUPPLIED ACCESSORIES ——

LABELS

(NOT REPLACEMENT ITEM)

TLABM5451BMZZ	-	Model Label (37DM-24S)	—
TLABK0001TAZZ	-	No. Label	—
TLABN0130BMZZ	-	Label	—
TLABN0132BMZZ	-	Label	—
TLABV2385BMZZ	-	Label (37DM-23S)	—
TLABV2386BMZZ	-	Label (37DM-24S)	—

—— End of LABELS ——

PACKING PARTS

(NOT REPLACEMENT ITEM)

MODEL 37DM-24S

SPAKC5335BMZZ	-	Packing Case	—
SPAKX4047BMZZ	-	Packing Add.	—
SSAKA1004BMZZ	-	Polyethylene Bag	—

MODEL 37DM-23S

SPAKC5336BMZZ	-	Packing Case	—
SPAKX4047BMZZ	-	Packing Add.	—
SSAKA1004BMZZ	-	Polyethylene Bag	—

—— End of PACKING PARTS ——

Ref. No.	Part No.	★	Description	Code

CABINET PARTS

MODEL 37DM-24S

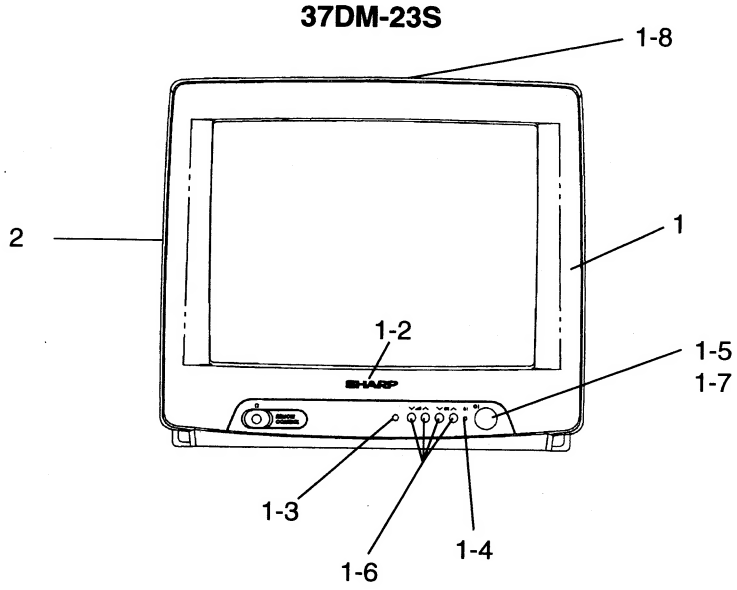
	CCABA1187BMV0	S	Cabinet Ass'y, Front	
	Not Available	-	Cabinet, Front	
	HBDGB1017BMSA	S	SHARP Badge	
	HDECQ0021BMSA	S	R/C Dec.	
	HDECQ0022BMSA	S	LED Dec.	
	JBTN-1038BMSA	S	Button, Power	
	JBTN-1039BMSA	S	Button, Up/Down	
	MSPRC0106BMFW	S	Spring, Power Button	AA
	PZETV1005BMKZ	S	Insulator	
⚠	RCiLG0415BMZZ	S	Degaussing Coil	
	XTASD30P12000	S	Screw	AA
	GCABB1067BMKA	S	Cabinet, Rear	

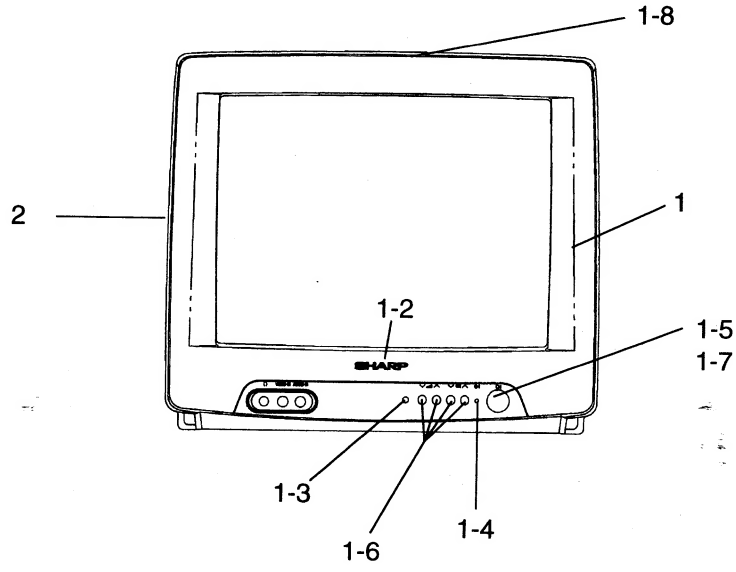
MODEL 37DM-23S

1	CCABA1188BMV0	S	Cabinet Ass'y, Front	
	Not Available	-	Cabinet, Front	
1-2	HBDGB1017BMSA	S	SHARP Badge	
13	HDECQ0021BMSA	S	R/D Dec.	
1-4	HDECQ0022BMSA	S	LED Dec.	
1-5	JBTN-1038BMSA	S	Button, Power	
1-6	JBTN-1039BMSA	S	Button, Up/Down	
	MSPRC0106BMFW	S	Spring, Power Button	AA
	PZETV1005BMKZ	S	Insulator	
⚠	RCiLG0415BMZZ	S	Degaussing Coil	
	XTASD30P12000	S	Screw	AA
	GCABB1067BMKA	S	Cabinet, Rear	

—— End of CABINET PARTS ——

37DM-23S





37DM-24S

— MEMO —

37DM-23S
37DM-24S

SHARP

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